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**Policy Climates and Climate Policies: Analysing the Politics of  
Building Resilience to Climate Change.**

Aditya Vansh Bahadur,

PhD. Candidate Development Studies

Institute of Development Studies, University of Sussex, United Kingdom

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I hereby declare that this thesis has not been and will not be, submitted in whole or in part to another University for the award of any other degree.

**Signature:**.....

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## **Acronyms**

ACCCRN-Asian Cities Climate Change Network  
 ANT-Actor Network Theory  
 CAC-City Advisory Committee  
 CBA-Community Based Adaptation  
 CCR- Climate Change Resilience  
 CDRSS-Committee on Disaster Research in the Social Sciences  
 CEPRD-Centre for Environment Protection Research and Development  
 CPSCC-Committee on Private-Public Sector Collaboration  
 CRM- Community Resource Management  
 DRR-Disaster Risk Reduction  
 UNDG-United Nations Development Group  
 EUCCR-European Union Climate Change Resilience  
 GDA-Gorakhpur Development Authority  
 GEAG-Gorakhpur Environmental Action Group  
 GHG-Green House Gas  
 GIS-Geographic Information System  
 GPS-Global Positioning System  
 IMC-Indore Municipal Corporation  
 IDS-Institute of Development Studies  
 IPCC-Intergovernmental Panel on Climate Change  
 ISET-Institute for Social and Environmental Transition  
 KNOTS-Knowledge, Technology and Society  
 MLA-Member of Legislative Assembly  
 MTE-Mid Term Evaluation  
 NAPA-National Adaptation Programmes of Action  
 OECD-Organisation for Economic Co-operation and Development  
 NGO-Non Government Organisation  
 PPCWMP- Pilot Project on Conjunctive Water Management  
 PRA-Participatory Rural Appraisal  
 RAPID-Research and Policy in Development  
 SAPCC-State Action Plan on Climate Change  
 SES-Socio Ecological System  
 SLD-Shared Learning Dialogue  
 STS-Socio Technical System  
 SWM-Solid Waste Management  
 TERI-The Energy Resource Institute  
 U.S.-United States of America  
 UK-United Kingdom  
 ULB-Urban Local Body  
 UNDP-United Nations Development Programme  
 UNISDR-United Nations International Strategy for Disaster Reduction  
 UNFCCC-United Nations Framework Convention on Climate Change  
 UNEP-United Nations Environment Programme

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UNIVERSITY OF SUSSEX

Aditya Vansh Bahadur, PhD. Candidate

Policy Climates and Climate Policies: Analysing the Politics of Building Resilience to Climate Change**Summary**

This thesis seeks to examine the politics of building resilience to climate change by analysing the manner in which policy contexts and initiatives to build climate change resilience interact.

For analysis, the ‘policy context’ is broken into its three constituent parts- actors, policy spaces and discourses. This permits the addition of new knowledge on how discourses attached to resilience are dissonant with those prevailing in ossified policy environments in developing countries; the influence of actor networks, epistemic communities, knowledge intermediaries and policy entrepreneurs in helping climate change resilience gain traction in policy environments; and the dynamic interaction of interest, agendas and power within decision-making spaces attached to resilience-building processes.

This analysis takes place by employing a case-study of a major, international climate change resilience initiative unfolding in two Indian cities. Using data gathered through a variety of rigorous qualitative research methods employed over 14 months of empirical inquiry the thesis highlights issues of politics and power to argue that they are significant determinants of processes to deal with climate impacts.

More specifically, it expands current understandings of engaging with climate impacts by exposing gaps in resilience thinking and argues against a technocratic approach to designing and executing resilience policies. In doing so it also demonstrates that resilience, with its emphasis on systems thinking, dealing with uncertainty and community engagement brings new challenges for policy makers. As the study is located in the urban context, it highlights the manner in which fragmented urban policy environments, dense patterns of settlement in cities, urban livelihood patterns and prevailing epistemic cultures can pose obstacles for a policy initiative aimed at building resilience to climate change. Finally, the research underlines the importance of coupling resilience with local narratives of dealing with shocks and stresses, argues for genuine iteration and shared learning during decision-making and highlights the need to celebrate multiple visions of resilience.

Findings from this research can help inform a growing number of policy initiatives aimed at deploying resilience to help those battling the exigencies of a changing climate in some of the world’s most vulnerable areas.

## **1 Introduction**

Climate change is one of the most pressing development and policy challenges of our times. While it may have some beneficial effects, these are generally outweighed by the negative in developing countries due to their geography, their reliance on natural resources, and lower adaptive capacity (IPCC 2007). Climate change influences extreme weather events; stresses natural resources such as fresh water, soil and forest cover; strains social relations, threatens peace and induces migration; wears down roads, dams and other physical infrastructure; and diminishes human health and capacity. These have further knock-on effects on trade and commerce, on poverty and wellbeing. Despite the importance of securing a solution, global agreements to limit the extent of climate change have lacked the urgency and ambition needed to tackle the problem. Further, scientific evidence indicates that the effects of climate change would continue to be felt for decades even if the emission of greenhouse gases (GHGs) stopped today (NASA 2013). Therefore, as opposed to a singular focus on the prevention of climate change, there is increasing emphasis on responding to its inevitable impacts (IPCC 2007, Dodman and Mitlin 2011).

Over the past decade, ‘resilience’ has emerged as one of the most significant policy responses to engaging with the impacts of climate change. Resilience can be defined as the ability of systems to “...absorb disturbance and re-organize while undergoing change so as to still retain essentially the same function, structure, identity and feedbacks,” (Folke 2006:256). Articles on resilience have increased by over 400% in ten years according to the Social Science Citation Index (from 80 in 1997 to over 380 in 2007) (Swanstrom 2008). Also, influential international development organisations have started to design and execute programmes focused on building climate change resilience. Between the World Bank’s billion-dollar ‘Pilot Program for Climate Resilience’, the Rockefeller Foundation initiatives for supporting climate resilience, and use of resilience as a framing concept by the UK Department for International Development across portfolios, ‘resilience’ is fast becoming the dominant response to the impacts of a changing climate.

This euphoric reception of resilience by powerful actors is being increasingly tempered with a growing recognition of the urgent need to better understand the manner in which this sophisticated concept interacts with the pulls and pressures thrown up by policy

environments where resilience initiatives are operationalised (Klein 2003, Leach 2008, Garschagen 2013).

The chapters that follow will explore this central issue by analysing the politics of a climate change resilience policy initiative unfolding across two cities in India. Essentially, this thesis looks at what happens when ‘resilience thinking’ and its attendant assumptions meet complex policy settings in urban areas of developing countries. This is done by examining the manner in which different elements of a policy making environment- discourses, actors and policy spaces, influence a resilience-building process. Conversely, the thesis will also study how climate change and resilience as policy issues influence and change the very policy making environment in which they unfold. As the research takes place in two cities in India, it also explores how the ‘urban context’ influences the politics of building resilience to climate change. Finally, the critically analytical academic analysis is used to highlight insights that would be useful to those involved in implementing resilience policies.

The empirical research is based on case-studies from two Indian cities where a resilience initiative is being implemented with funding from the Rockefeller Foundation. This initiative presented a unique opportunity to analyse the politics of building resilience to climate change as it was unfolding during the time that this research was taking place. It is one of the early attempts at operationalising the concept of resilience at scale and involves a range of different policy actors and institutions across different scales and sectors. This presents an ideal milieu for a study of this nature. The main findings presented in this thesis have been distilled by combining data gathered through a range of qualitative research methods (employed over 14 months of fieldwork) with insights from secondary literature on resilience and policy processes.

The research findings contribute to the conceptual body of knowledge on resilience and on the politics of climate change policy processes. More specifically, by examining the manner in which initiatives to build resilience interact with policy environments, the research will provide resilience planners a realistic glimpse into the potential and pitfalls of conceptualising and undertaking programs of building resilience to climate change.

Even though resilience is itself a novel policy response to climate impacts, ‘urban resilience’ is at the very cutting edge of work in this area. While this research has a wider, more ambitious scope, it is located firmly in the urban context and as such, the thesis that follows will also include novel insights into opportunities and challenges that urban areas throw up to those engaged in formulating resilience policies. The focus on understanding processes of building resilience in the context of ‘developing countries’ is yet another innovative element of this research as ‘resilience’ (especially as it applies to coupled human and environmental systems) has been largely explored by northern researchers in northern contexts (more details in section 2.4). Finally, the research is also aimed at exploring the degree to which climate change and resilience issues bring new challenges and pressures on policy making processes.

If there is one central theme running through the pages that follow, it is that issues of power and politics have a determining effect on the manner in which ‘resilience thinking’ is deployed to help vulnerable people deal with the pressures of a changing climate. In doing so, this research exposes the shortcomings in the current understanding of how resilience can help to successfully deal with climate induced disturbances in urban areas of developing countries. The thesis then is also an exploration of issues that need to be considered in order to fill these gaps to exploit the true potential of this powerful concept.

The thesis has eight chapters. Following this introduction, Chapter 2 sets the stage by mapping out the research questions, the research setting, the case study, the rationale, the methodology and ends with a short note on the researcher’s positionality. Chapter 3 explores key literature and sets out the analytical framework employed by the thesis. Chapters 4, 5 and 6 contain the main findings of this work. Chapter 7 then emerges from the specificities of a particular case to provide broader insights into the politics of building resilience. It lays out the major findings of this study and answers the research questions outlined in Chapter 2. A very short final chapter presents ideas for future research that follow on from this work.

## 2 Setting the Stage

### 2.1 The Research Questions

The research that follows answers one major and four interlinked research questions: all of which together seek to analyse the politics of building resilience to climate change.

Main Question: In what ways do initiatives to build climate change resilience interact with the policy environments in which they unfold?

The main research question aims to analyse the results of ‘resilience thinking’ (with its numerous sophisticated postulations on dealing with disturbances) meeting ossified urban policy environments in developing countries such as India. Implicit within this central question is an assumption that policy environments influence resilience building initiatives and these initiatives in turn influence the very policy environments in which they unfold. The study of this dynamic interaction then holds the potential to shed light on the process of conceptualising resilience so as to make it relevant to and effective in helping vulnerable populations battle the exigencies of a changing climate.

Question 1: How do different elements of the policy environment influence resilience-building initiatives?

The central question listed above will be answered by analysing the manner in which policy environments influence initiatives to build resilience to climate change. The perusal of a wide body of policy science literature has led to an understanding of the manner in which a policy environment (also referred to as a policy context or a policy process context) is made of three dominant parts: discourse, actors and spaces (see section 3.2). The research that follows then uses this schema to understand the influence of each of these elements on the resilience initiative in question.

Question 2: What is the influence of resilience thinking on policy environments in developing countries?

Just as the previous question seeks to understand the manner in which different elements of the policy context influence the resilience initiative; this question will aim to

understand the influence of the resilience initiative on the resilience intervention. Each of the three main chapters of this thesis (Chapters 4, 5 and 6) also aim to analyse the effect of ‘resilience thinking’ on policy discourses, on actors engaged in the policy-making process and on the spaces within which policy decisions are taken.

Question 3: What do urban contexts add to the interaction between climate change resilience initiatives and policy environments?

As it will be explored in section 3.1, the concept of resilience thinking as it applies to dealing with environmental change and disturbance has largely been developed in the rural context (Dodman 2008, EU 2012). As such, there remains a sizeable research gap in understanding how this concept, that is fast becoming the dominant paradigm of responding to climate impacts, interacts with the urban policy contexts. Therefore, this question will attempt to tease out the unique opportunities and challenges that urban areas pose to processes of building resilience to climate change (Chelleri 2012).

Question 4: How can a greater understanding of the politics of policy processes make climate change resilience initiatives more robust?

After understanding the multidimensional interaction of policy process contexts with initiatives to build climate change resilience, this final segment of the thesis’ inquiry will attempt to answer the critical question- ‘so what’? Without being prescriptive, the thesis will attempt to outline the implications of understanding the interaction of resilience building initiatives with their policy process contexts. This will draw on the conceptual analysis undertaken to distill principles that could make attempts to operationalise resilience more robust.

## 2.2 The Research Setting

The research questions listed in the previous section will be answered by using the case of a particular resilience initiative unfolding in Gorakhpur and Indore, cities in the north and center (respectively) of India.

### 2.2.1 India

With a population of 1.15 billion, India is the second most populous country in the world. In 2008, the population growth rate was 1.34%; 25% of the Indian population lives below the national poverty line; the country has a per capita income of USD 944 (World Bank

2010, Garg 2010, CIA 2010). As the research locates itself in the urban context, it is important to look at the fact that 28% of the Indian population lives in urban areas; India is fast urbanising and the urban-rural ratio (i.e. number of people residing in urban areas for every 100 people in the rural) has steadily increased over the last 10 census surveys (held every decade) and currently stands at 38.47 (Datta 2006). Urbanisation in India is characterised by an increasing population in its large urban centers; for instance, in 1901 there were only 24 cities with more than 100,000 people and this has risen to 393 in 2001 (ibid). Similarly, there were only 5 cities with more than 1,000,000 people in 1951 and this has risen to 35 in 2001 (ibid). Mukhopadhyay and Revi (2012:304) look to the future to note that "...over the next 40 years, India could experience one of the most dramatic settlement transitions in history, with its urban population growing from about 300 million to more than 700 million."

India has a range of environmental problems and the country is already suffering from the disastrous consequences of a changing climate that are set to worsen over the next few years; United Nations Environment Program (UNEP) has put India on a list of 27 countries that are most vulnerable to climate change (Jha 2011). A former environment minister of India says, "I think there is no country more vulnerable to climate change than India, on so many fronts," and then goes on to highlight the manner in which the country's dependence on the Monsoon, its long and populated coastline, Himalayan glaciers and importance of natural resources to the economy all contribute to this vulnerability (Ramesh 2012: Xix). The national annual-mean surface air temperature has increased by 0.51 degrees C over the past century with most of the increase taking place in the last 30 years (Srinivasan 2012). Over 50 years extreme rainfall events have increased (by over 50% in certain areas such as Central India) (ibid). A variety of scenarios place expected temperature rise in India between 1.5-2 degrees centigrade by the end of the century and it is also expected that Monsoon rains will intensify as a result of climate change (Gupta 2011). Moreover, shrinking Himalayan glaciers are expected to cause water shortages for up to 500 million people across the subcontinent, rising sea levels will affect the lives and livelihoods of 2.7 million Indian families, and increasing temperatures will substantially affect India's flora, fauna, biodiversity and agricultural productivity (UNDP 2010). In India,

... climate change could represent an additional stress on ecological and socioeconomic systems that are already facing tremendous pressures due to rapid

urbanization, industrialization and economic development. With its huge and growing population...and an economy that is closely tied to its natural resource base, India is considerably vulnerable to the impacts of climate change (ibid).

Apart from being one of the countries most vulnerable to climate change, India is the world's fourth largest emitter of Greenhouse Gasses (Dubash 2009). Despite this, it has been charged with adopting an unyielding position in international climate negotiations because the country has decided that "... its domestic mitigation actions are not subject to measurement, reporting and verification (MRV) under the global climate regime, except in those cases where mitigation actions are directly supported by technology, finance and capacity building support," (ibid: 5). While maintaining a hard stance in global negotiations, India has started to develop domestic climate policies. The first among these is the National Action Plan on Climate Change (2008) which is a sum of eight 'missions'- National Solar Mission, National Mission for Enhanced Energy Efficiency, National Mission on Sustainable Habitat, National Water Mission, National Mission for Sustaining the Himalayan Ecosystem, National Mission for a "Green India", National Mission for Sustainable Agriculture and National Mission on Strategic Knowledge for Climate Change (2008). Even though this was widely hailed as a step in the right direction, it has been criticised on a number of counts (Priyadarshani 2012). These include the fact that some goals of this policy are too broad (Byravan and Rajan 2012); there is a lack of clarity as to whether the policy is designed to fulfill domestic or international aspirations (ibid); and that there are no clear targets for emission reductions (ibid). Dubash (2009:8) adds to this critique to note that the plan failed to "...fully take on board creative ideas from outside government, rather too driven by the need to market India's actions to an international audience, leading in places to overblown and ambitious claims." Apart from this nodal policy 14 of India's 28 States also have a State Action Plan on Climate Change (SAPCC). There is a degree of variation in the quality of these plans but in general they have been criticised for the absence of targets, timelines and financial details; and scant attention to issues around equity, rights and gender (Jha 2011).

### 2.2.2 Gorakhpur

Located in the north Indian state of Uttar Pradesh at the confluence of the Rohin and Rapti rivers, Gorakhpur is on the Gangetic plain which is one of the country's most densely-populated areas (Dube and Mishra 1988). Gorakhpur has a population of 0.6



**Figure 1** The study area: Gorakhpur on a map of India

with a slight depression towards the center, giving it the shape of a ‘bowl’ or ‘saucer’ (GEAG 2009). The other major topographical feature of the city is the Ramgarh Tal, a natural lake that also acts as a storm-water reservoir for the city. The primary economic activity of the area is agriculture and Uttar Pradesh has a per capita income of INR 9,765/ USD 218 (Whereincity 2010). The climate of Gorakhpur is “dominated by the monsoon with an average annual rainfall of 100 mm,” (ISET 2009:25). Both Members of Parliament from Gorakhpur belong to the right wing Bharatiya Janata Party, its nine representatives to the State Legislative Assembly come from a variety of political parties including the Bahujan Samaaj Party, the Samajwadi Party, the Indian National Congress and Bharatiya Janata Party. The city has an average temperature of 25.68 degrees Celsius and receives 119.2 CM of rainfall annually (GEAG 2009). Temperatures in the city demonstrate an upward trend with 9.51% growth in maximum temperature during 2003-2008 and 22.84% decrease in minimum temperature during 2002-2008 (ibid). Despite substantial year on

million that is growing at the rate of 23.61% (1991-2001), this gives the city a high population density of 4559 Km<sup>2</sup> (GEAG2009). 33% of its inhabitants live in slums (ISET 2009). It is the region’s second most populous city after Varanasi (Government of India 2001). The city has a relatively flat topography

year variation, the rainfall over the last three decades has been gradually increasing. Gorakhpur is already suffering the consequences of a changing climate as it,

...currently faces severe water logging problems, lack of solid waste management and adequate sewerage network (which is prone to clogging and leakages). These problems are exacerbated by their current climate hazards, such as heavy rains and flooding, and will worsen as climate change leads to greater precipitation variability, (Rockefeller Foundation 2010:6).

While there is a dearth of published hard scientific data on climate change impacts immense anecdotal evidence suggests that Gorakhpur is reeling under stress from climate change, a report from Oxfam India says,

The topography is so uneven that a little rain can flood low-lying areas and during heavy rains, floods can play havoc. So, climate change in this part of Uttar Pradesh is made worse by topography and other man-made factors like construction of road, blocking of drains, etc. On top of it, there is no proper drainage system and so rainwater continues to stagnate making the areas prone to malaria and Japanese encephalitis (Kannan 2009)

Gorakhpur's problems of water logging/flooding are congruent with global trends, for example Dodman (2008:2) notes,

Even in towns and cities where overall rainfall totals are declining, precipitation is tending to occur in shorter, more intense bursts that can overwhelm urban drainage systems and trigger flash floods.

### 2.2.3 Indore

Located on the banks of the Khan and Saraswati Rivers on the Malwa Plateau, Indore is one of the most important cities of the central Indian state of Madhya Pradesh. Indore has a population of 2.4 million that grows at 4% annually that is substantially higher than the national decadal growth rate of 22% (TARU 2010). The decade from 1991 to 2001 saw substantial increase in the population growth rate of the city due to marked industrial and commercial development (ibid). The population density of the city ranges from 100 persons/ha on the outskirts of the town to 1028 persons/ha in the center (ibid). 260,000 individuals live in slums. Many of these form part of the city's 'floating population' of migrants from the extremely poor hinterland areas around the city (TARU 2010, ISET 2009). The topography of the town is marked by a gentle slope towards the north and two large tanks for water retention to the south (TARU 2010). Indore is a commercial hub

with a range of industrial units that include, "...textile units, food processing, pharmaceuticals, iron, steel, leather, industrial chemicals and automobile components." The per capita income of Madhya Pradesh is INR 12,566/USD 278 (ISET 2009:31,



**Figure 2**The study area: Indore on a map of India

by the monsoon from June to September," (ISET 2009:31). Indore's climate can be characterised as tropical wet and sub-tropical dry (TARU 2010). Indore too is suffering from the impacts of climate change as,

...rising temperatures and increasing incidence of non-monsoon season drought for this landlocked industrial city are contributing to the city's vulnerability and increasing disease load. Water scarcity and mining of groundwater will also increase with greater demand and variability in precipitation and droughts. (Rockefeller Foundation 2010:6). Water scarcity will also be exacerbated due to the substantial population pressure and, if the city continues to grow at 48% or more per decade, water crisis will be perpetual over the next couple of decades, unless the whole water supply infrastructure is revamped and water recycling is done to meet part of the low end demands. Since Indore is also a major industrial

Indian Express 2008). Indore is represented in the lower house of Indian Parliament by a member of the right wing Bharatiya Janata Party and in the State Legislative assembly by members of the Indian National Congress and the Bharatiya Janata Party. "Temperatures in Indore range seasonally from 40 degrees Celsius to 2 degrees Celsius with

precipitation dominated

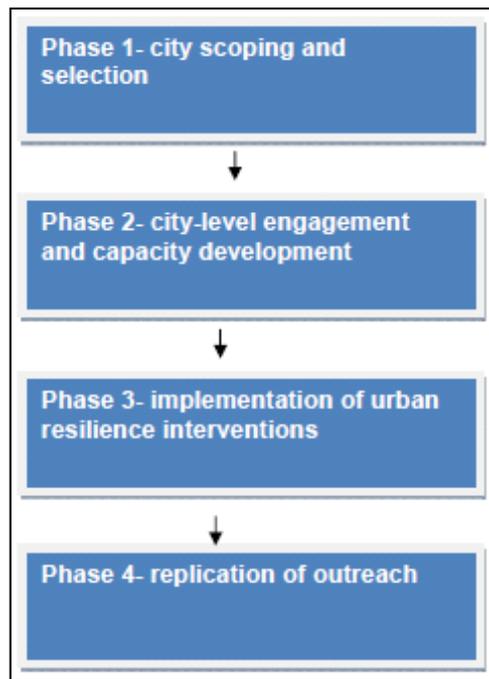
hub in western India, the industrial demands' are also likely to increase to create competing demand. (TARU 2010: 27).

This is congruent with the observation made by Wilbanks et. al. (2007) that a number of cities from across the world will face water scarcity as a result of a changing climate. It also resonates with Dubash's (2012:5) statement that "Declining availability and greater variability of water is perhaps the greatest adaptation challenge India will face due to climate change."

### 2.3 The Case Study

This research project employs the Asian Cities Climate Change Resilience Network (ACCCRN) as a case study. This section will examine the nature, modalities and objectives of the initiative globally and then in the cities of Gorakhpur and Indore.

#### 2.3.1 The Asian Cities Climate Change Resilience Network



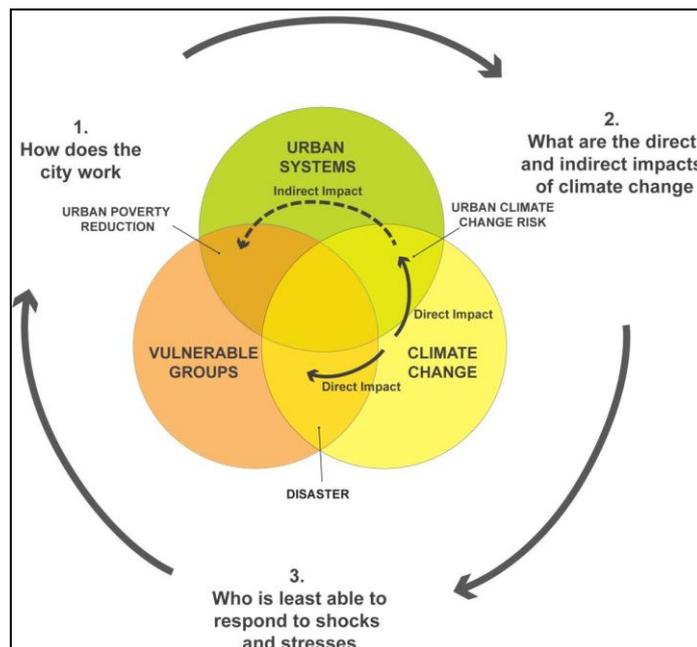
**Figure 3** Stages of the ACCCRN

Funded by the Rockefeller Foundation, the goal of Asian Cities Climate Change Resilience Network is to measurably enhance the resilience of ACCCRN cities' institutions, systems and structures to current and future climate risks, and through this, measurably improve the lives of poor and vulnerable people (Rockefeller Foundation 2009:3).

The project is being implemented in 10 cities in Asia and has three specific expected outcomes. First, it aims to improve the capacity of the cities to "plan, finance, coordinate and implement climate change resilience strategies," (Brown et. al. 2012: 532). Second, it aims at developing a knowledge and learning network as "... shared practical knowledge to build urban climate change resilience deepens the quality of awareness, engagement, demand and application by ACCCRN cities and other stakeholders." (ibid). Third, the ACCCRN strives towards an expansion and scaling up of its models and processes, hoping that "...action through existing and additional support (finance, policy, technical) is generated by a range of actors," (ibid).

Closely associated with these expected outcomes are three sets of interlinked objectives. First, the piloting of tools, techniques and strategies to build resilience to climate change through engagement with partners (a range of civil society and government organisations) at the city level (ARUP 2009). Second, providing examples of the successful building of resilience at the city level for a “future network of Asian cities and leading preparedness for the current and future impacts of climate change,” (ibid:2). Third, “the development and use of policy incentives, attraction and implementation of investment funds, and improvements to infrastructure,” as possible resilience strategies (ibid:2).

The project has been conceptualised in four phases, a) ‘city scoping and selection’, where 10 cities were identified to “pursue deeper engagement” based on a number of parameters (Rockefeller Foundation 2009:4); b) ‘city-level engagement and capacity development’ where dialogues with key government, civil society, research and private sector institutions were carried out to undertake planning to develop an improved capacity to use climate information, increase an understanding of vulnerabilities at the city level and develop “appropriate urban climate change resilience strategies, action plans and interventions...” (ibid:4); c) ‘implementation of urban resilience interventions’ where plans developed in the previous phase will be implemented; d) ‘replication of outreach’ where “...ACCCRN will share and link its efforts of city engagement and investment in a selected number of interventions with the work of other donors and governments,” (ibid:4).



**Figure 4** ACCCRN Conceptual Framework (daSilva 2012)

The initiative employs a conceptual framework formed of three interlocking elements—urban systems, climate change and vulnerable groups (da Silva et. al. 2012). This leads to an internal logic of the initiative that begins by investigating the manner in which the city works, then overlaying this with an understanding of the direct and

indirect impacts of climate change and finally looking at those who are least able to respond to shocks and stresses (ibid).

### 2.3.2 The Asian Cities Climate Change Resilience Network in Gorakhpur

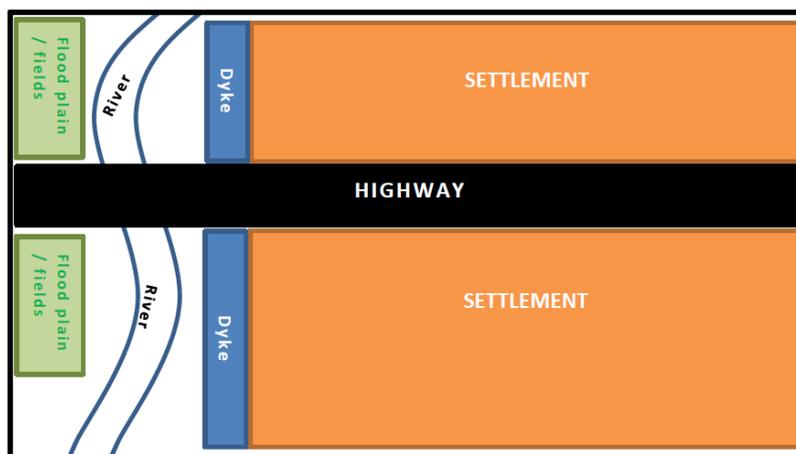
The Rockefeller Foundation has appointed the Gorakhpur Environmental Action Group (GEAG) as the 'City Partner' (also called local NGO or grantee organisation through this thesis). The organisation has its roots in a movement by students and teachers of Gorakhpur University to help preserve the local environment and natural resources and was formally registered as a Non Profit in 1983 (GEAG 2010a). The sectors that it works in include low external input sustainable agriculture, sustainable livelihood models, and adaptation to climate change, gender equity and rights of small and marginal farmers(ibid). GEAG is run by Dr. Shiraz Wajih, who is also a professor at the Gorakhpur University and has a small, core staff of workers experienced in employing participatory approaches to attaining sustainable development objectives.

GEAG came to be involved with the ACCCRN in 2009 when Gorakhpur was being considered as one of 10 ACCCRN cities. Once Gorakhpur's selection was confirmed, the GEAG immediately started a process to discuss its aims and objectives with a variety of audiences within the city. Concurrently with this, the organisation also started to consolidate a City Advisory Committee (CAC). This was to be a panel of individuals with diverse skills and expertise that would help steer the ACCCRN through its various phases. This group would meet to ratify and amend important project plans, review studies and assessments, advise on methods to best achieve project objectives and contribute knowledge of different components of the city system. There were 11 members on the CAC in Gorakhpur and this included the Municipal Commissioner; Professors of Geography, Medicine, Biotechnology and Engineering from local Universities; a prominent hotelier; an eminent lawyer; a representative of the Indian Meteorological Department; and representatives from the city's water supply and electric supply departments.

Once this advisory committee had been consolidated, the GEAG started to assess the vulnerability of Gorakhpur city to climate change impacts. The vulnerability assessment took place through the use of primary data collection methods that included individual questionnaires and Shared Learning Dialogues that were conducted in groups in 14 of 70

wards (a ward is a subdivision of the Municipal Corporation/city government) of Gorakhpur city. Secondary data collection entailed the analysis of satellite images to map vulnerable areas. This process led to the consolidation of an understanding of the major problems facing the city. Along with this process of vulnerability assessment, the GEAG also commissioned ‘sector studies’ and ‘pilot projects’. The former were essentially analyses of different sectors/issues influencing the city’s vulnerability to climate impacts and included studies on Gorakhpur’s geo-hydrological cycles, solid waste management, sanitation bodies and conservation of water bodies. The pilot projects consisted of three projects; the first and most extensive project focussed on demonstrating an effective model for decentralised solid waste management; the second was a campaign to reduce the use of polythene in the city; and the third was a review of the Government’s Master Plan for the city’s development from the perspective of its vulnerability to climate change.

As this research includes an analysis of the pilot project on solid waste management, a more detailed look at it would be instructive. Stemming from the rationale that the prevailing improper solid waste management in Gorakhpur leads to water logging that is set to worsen as a result of climate change, the GEAG helped institute a scheme for the scientific management of garbage from 200 households in one neighbourhood. Run by the citizens of the Purdilpur neighbourhood themselves, with minimal supervision from GEAG, the scheme entailed the door-to-door collection of garbage. Once this garbage was collected, it was sorted and the biodegradable components were converted into manure; most non-biodegradable components were recycled; and the remaining ‘inert’ waste was disposed in landfills. Proceeds from the sale of the manure and recyclable material was ploughed back into the scheme (e.g. to pay the salaries of waste collectors).



**Figure 5 Schematic of Maheva Ward, Gorakhpur**

Concurrently with the pilot projects, the GEAG started preparations for the main intervention that they envisaged under the ACCRN in the

city. This was called ‘Developing, Testing and Institutionalizing Ward Level Micro Resilience Planning – A Model for Replication’ and essentially entailed, intensive resilience building interventions being undertaken in Maheva (1 of 70 ‘wards’ in Gorakhpur). Maheva has a population of 8226. Located on the outskirts of the city, Maheva runs along a riverbed and an embankment, a major highway connecting Gorakhpur to Varanasi (the other important city in the region) cuts across this ward. Maheva is further divided into six neighbourhoods-each of which has a somewhat distinct socio-economic constitution and therefore, suffer climate impacts differentially. According to GEAG (2010) 33% of the area suffers from waterlogging (as opposed to the problem impacting 18% of the city). Large parts of Maheva can be considered to be an informal settlement or slum; these type of settlements make up 30-50% of all urban centres in low and middle income countries (Dodman et. al. 2013).

The objectives of this intervention in Maheva included the development of a model for a climate resilient ward that can then be replicated elsewhere; to share learnings on building resilience coalesced in Maheva with other similar wards in the city; the integration of micro resilience plans developed in Maheva with broader plans to make Gorakhpur more resilient climate change over the long term; and to actively support processes of decentralised planning at the ward level by employing Maheva as a test case (GEAG 2010). The methods that this project adopted included the institution of participatory planning processes around climate change and resilience issues to identify vulnerabilities and capacities of the residents of Maheva. Following from this a number of interventions were designed and executed in the ward that included health drives (to spread awareness on diseases resulting from water-logging), developing resilient agricultural practices, reviewing drainage plans, instituting citizen led solid waste management (such as that which was done in the pilot project); and linking citizens with Government departments and Urban Local Bodies. Infrastructural changes such as the demonstration of flood resistant housing and redoing drainage in parts of the slum were also envisaged but were not underway during the time the researcher was conducting fieldwork. All this was being done by a small project team in GEAG’s main office, 5-6 members of the team located in the project office within Maheva and a cadre of 18 volunteers recruited from within the locality. (More detail on this is included in the chapters that follow).

### 2.3.3 The Asian Cities Climate Change Resilience Network in Indore

TARU- a consulting firm was appointed as the city partner in Indore. Started in 1990, TARU has a portfolio of projects that cuts across policy sectors and its list of clients includes the government as well as bilateral, multilateral and civil society organisations. The ACCCRN in Indore followed broadly a similar process as the project in Gorakhpur. Once Indore was confirmed as a city where the ACCCRN would be rolled out, TARU immediately started to identify relevant stakeholders who should be involved in the initiative (with an emphasis on reaching out to individuals within the Indore Municipal Corporation and Indore Development Authority).

Once initial outreach to key stakeholders was complete, TARU began to consolidate the City Advisory Committee. The CAC in Indore is comprised of 20 individuals who represent the Indore Municipal Corporation, the Narmada Control Authority, the State's Electricity Board, local academic institutions, the Indore Development Authority, Town Planning Department, civil society organisations, the private sector and the media (TARU 2010).

Concurrently, TARU also began to assess the vulnerability of the city to the impacts of climate change. This assessment had two major components, first vulnerability was analysed using Geographical Information Systems (GIS) where the city was divided in to various sectors based on socio-economic classes and attributes of building structures (ibid). This information was extended and corroborated using a reconnoitre enabled with the Global Positioning System (GPS) across the whole city (ibid). This helped to lay the foundation of field assessment that consisted of household and community level surveys (covering 1250 households and 125 settlements)(ibid). Results of the vulnerability analysis were discussed and reviewed by people with an understanding of city systems. This process resulted in an insight into the climate related vulnerabilities and the capacities of the city as well as the major areas for adaptation. Just as in Gorakhpur, this formative intensive research phase also entailed the consolidation of sector studies that analysed various sectors that have a bearing on the city's engagement with climate impacts; these included a study on the relationship between the urban environment and public health, urban transport, electric energy scenario of the city, study on green building in the city and water security. This phase was used as a foundation for the consolidation of a city resilience strategy for Indore. This was done using variety of methods including

scenario planning workshops and consultations undertaken in a series of ‘risk to resilience workshops’. The study resulted in an identification of possible resilience building interventions across 6 sectors (water, energy, natural disasters, transportation, health, waste management).

Along with the consolidation of this resilience strategy, TARU also ran a pilot project on Conjunctive Water Management in four neighbourhoods of the city that was the main focus of this doctoral research in Indore. This project aimed to understand the patterns of water use at the community level; assess the potential for natural and groundwater recharge in these four neighbourhoods; spread awareness on conservation and judicious use of water; and examine the feasibility of disincentivising the use of fresh water supplied at great expense to the city from the Narmada river for low quality demanding end uses (e.g. flushing toilets.) (Moench et al. 2011)<sup>1</sup>. This pilot project was being implemented by the Centre for Environment Protection Research & Development (CEPRD) a local NGO contracted by TARU. CEPRD had helped form water-user groups in these four localities that were each led by a Secretary. These were groups of citizens who used to come together in a public space within the locality to discuss water management issues amongst themselves as well as receive know-how on novel water management techniques (water harvesting). An effort was made to ensure that the four localities represented very different socio-economic stratifications of the city, therefore while two were home to some of the city’s poor, the other two had distinctly middle class residents.

## 2.4 The Rationale

After having looked at the case study, it would be useful to examine the rationale for this doctoral project. First, formal initiatives of climate change adaptation and resilience in India are at a nascent stage of development. The country has only recently begun to grapple with the problem as evidenced by the release of India’s first National Action Plan for Climate Change towards the end of the last decade (Government of India 2008). Within this, policies, programs and projects to build ‘resilience’ are even newer. Therefore, this is an opportune time to draw lessons on the influence of various

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<sup>1</sup> The focus on dealing with water scarcity is congruent with projected climate impacts for India. Gupta (2011:13) says, “The amount of water available per person in India is decreasing steadily – from 3450 cm in 1951, to 1250 cm in 1999 and further to 760 cm per person in 2050. By the year 2050, the average annual runoff in the river Brahmaputra will decline by 14 %.”

components of a policy process on a resilience approach and vice-versa. The findings of this study and its derivative research outputs will be of substantial potential use to upcoming climate change resilience projects.

Second, the research will examine how actors, networks, ideologies, contexts, politics and interests determine the nature of a climate change resilience policy. The endeavour will be to see how and in what situations, these different entities exert a variable influence on the policy being shaped in order to provide greater understanding of issues that need to be considered while consolidating climate change resilience policies. This is particularly important as traditional understandings of policy processes discount the pivotal role of power and politics in the formulation and execution of any policy (see section 3.2). The research presented here will actively engage with such issues and fill a vital gap in understanding around the influence of these entities in the policy process-allowing those engaged in making and executing policies a more realistic glimpse into the policy process.

Third, the sheer expanse and complexity of the climate change problem has led to a burgeoning of models resembling ‘one size fits all’ solutions, e.g. the NAPA process (Desanker 2010), Adaptation Frameworks by UNDP (Lim 2004) or OECD Guidelines on adaptation (OECD 2009). While many of these argue for individually tailoring approaches to suit particular situations, this research will further test the value of a strongly relative approach in the design and implementation of resilience approaches by understanding the dynamic interaction of these approaches with the contexts in which policy processes unfold.

Fourth, much of the research on how communities can become resilient to climate impacts has overlooked the specific challenges thrown up by urban areas through their sharp focus on the rural<sup>2</sup>. A substantive European Union research report on urban resilience notes that while there is research on climate change, there remains a “dearth of coordinated studies that adopt an integrated urban perspective” (EU 2012:7). This links back to the antecedents of resilience thinking in Ecology and the study of ecosystems, which were then applied to study sectors conventionally thought of as ‘climate sensitive’

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<sup>2</sup>This is despite the fact that there are differences between the two contexts including the spatial concentration of hazards as well as possible synergies between disasters (Bul-Kamanga et. al. 2013).

such as agriculture/rural livelihoods. Lankao and Qin (2011) go one step further to argue that there is a scant understanding of the dynamics of urban vulnerability, let alone urban resilience. The application of tools and techniques conceptualised for rural settings are dissonant with the realities of the urban. The dearth of research on resilience in urban contexts is also astonishing because these are the theatres in which the battles against climate change will increasingly be fought.

Cities are usually situated along coasts or rivers – areas that are at high risk from hydro-meteorological hazards (e.g. cyclones/typhoons/hurricanes, coastal storm surges, floods) (ibid). Also, despite this heightened exposure and risk in towns and cities, “their municipal governments often lack the resources and/or inclination to implement adequate adaptation and preparedness measures. Yet the climate impacts predicted for these urban areas will be severe” (Gasper et. al. 2011: 10). Moreover, processes of urbanisation themselves make cities very vulnerable to climate change, as “...urban development fragments, isolates, and degrades natural habitats, simplifies and homogenizes species composition, disrupts hydrological systems, and modifies energy flow” (Alberti 2004:241). Also, cities tend to concentrate people and infrastructure in relatively small geographical spaces which enhances vulnerability to physical events that gain the potential to become disasters (Dodman and Satterthwaite 2008). Finally, in 1900 less than 15% of the world’s population lived in cities but now that the world’s urban population has surpassed its rural population, it’s time that urban areas occupy centre stage for action against climate change (Chelleri 2012, Dodman and Satterthwaite 2008, Lankao and Qin 2011). Therefore, by locating itself in the urban, this thesis intends to partially correct the historical imbalance in resilience research.

Fifth, Resilience Thinking owes its beginnings and much of its development to the work of the noted ecologist, C.S. Holling (e.g. 1973, 1986, 1987, 1988, 1992, 2001). Initially, Holling examined resilience primarily in ecological settings and later expanded this discussion to include coupled human-environmental systems, all this work is located firmly in northern research contexts. The same can be said of many other noted resilience researchers such as Folke (2006), Gunderson and Holling (2001), Carpenter (2001), Berkes (2007) and Cutter (2008). Moreover, notable hubs of research on resilience such as the Stockholm Resilience Centre are located in the north, have predominantly northern researchers and have conducted comparatively little research in the context of developing

countries. In their reviews of resilience in socio-ecological systems Bahadur et. al. (2010, 2013) examine the diverse ways in which resilience has been conceptualised. None of these conceptualisations were specific to developing countries (ibid). The same is largely true for another extensive review of resilience by Breen and Anderies (2011) who use resilience literature not specific to developing country contexts to try and distil lessons that may be applicable to vulnerable populations in these areas. McIntosh et. al. (2008) in their review of resilience, categorically note that the concept has been predominantly studied in Australia, Canada, the United States, Britain, South Africa and New Zealand. This is surprising as some of the most serious impacts of climate change will be realised in the global south (Carmin et. al. 2012). This has led to some claiming that resilience in its current form is not adequate to engaging the problems of developing countries (Swanstrom 2008). Through its close analysis of a resilience initiative unfolding in India, this research will shed light on the congruence of the concept with the reality of developing countries and provide insight into what is needed for these to achieve their full potential.

Sixth, it is the researcher's contention that climate change resilience is bringing new and interesting opportunities and challenges to traditional policy environments due to a number of reasons. The first of these is the inherent 'multi-sectoral' nature of the climate change issue, unlike a number of policy areas that carry the possibility of flourishing in silos, policies around climate change can only be successful if they effectively bring key stakeholders from a number of different sectors together. In extension to the point above, climate change cuts across scales effectively. It is a global issue being driven by prominent international platforms, it is an agenda that is increasingly being discussed at the national level but its impacts are experienced locally. Another unique dimension that climate change introduces to a policy making process is uncertainty (TERI 2006). Therefore, this research is an attempt to rigorously ascertain the specific challenges to policy making thrown up by the climate change problem.

## 2.5 Methodology

After establishing the background of the research, this section will aim to analyse four primary methods of investigating the central and sub-questions discussed in section 2.1. For each method an attempt to discuss its aim (the type of data/knowledge/information that this method will potentially yield); the nature and practical technique (details on type

of method, issues of access and pragmatic approach); the challenges that the researcher encountered in employing this method; and reflections on methodological issues (theoretical reflections, issues of power, pre-requisites etc.)

### 2.5.1 Participant Observation

Participant observation was selected as an important research method because it was only through immersion in a climate change resilience initiative that one could really come to grips with the politics of policy and decision making processes. Participant observation was also applied with the aim of accumulating data that is authentic as “...ethnographic research methods attempt to study social life as it unfolds in the practices of day to day life. These methods avoid as much as possible artificial research situations,” (Desai and Potter 2006:180). Also, ethnographic methods such as participant observation allow researchers to garner findings that are ‘unexpected’ and are known to expand their field of vision (ibid). Immersion into the field of study as a participant allows one to decipher the influence of social and cultural norms on policy making -- an insight that other more ‘direct’ methods may not extend (ibid). Finally, being immersed in the research situation extends to the researcher, the ability to observe anomalies to simple cause and effect relationships that interviewees and project documents may imply (ibid).

The researcher gained access to the research context by becoming an intern with the Institute for Social and Environmental Transition (ISET)- a key organisation involved in the development and execution of the ACCCRN. A memorandum of understanding was signed with the organisation where it was agreed that they would assist the researcher with access to data (documents/interview respondents etc.) in turn, the researcher would occasionally help ISET in writing and editing project documents. As such the researcher was a ‘participant as observer’ rather than a “complete participant” or a “complete observer” (Bernard 2002: 327). Though the researcher secured this internship, he made it very clear that his primary role while in the field was that of a researcher and not a full time member of project team. As such participant observation was in the form of ‘overt’ ethnography (Bryman 2001). This approach of being effectively ‘embedded’ in the research setting allowed the researcher to cause least disturbance. Gomm (2004 P227) comments on this when he says,

Participant observation research requires the researcher to find a role to occupy in the setting studied. This is at least so that they can fade into the

background and not disrupt ‘things as usual’ except in the ways that ordinary members influence each other.

Data through participant observation was collected in the form of field notes. These were mainly in the form of ‘scratch notes’, that are “...very brief notes written down on pieces of paper or in small notebooks to jog ones memory about events which should be written up later,” (Bryman 2001: 305). Many times these scratch notes were combined with important interviews and added the ‘context’ of the discussion that was not explicitly captured through the questions and answers of the interview.

It was through participant observation that the researcher understood the key discourses around climate change and resilience at play in the research setting; met the important actors involved in the initiative understood their role and the relationships that they shared with other actors; and gained an insight into how the spaces within which decisions were made were structured. This included accompanying members of the project team conducting surveys with residents of the neighbourhoods in which the ACCCRN was unfolding, sitting in on meetings between community members and the project team, participating in drives led by the project team to raise awareness of water born diseases and attending as well helping coordinate workshops and capacity building events. Much of the ‘story’ and ‘colour’ of the narrative in this thesis has been derived from walking through the project areas, having informal conversations with people, sipping innumerable cups of sweet and milky tea with volunteers and community level workers, striking conversations with others also waiting to meet the same government official etc. Also participant observation provides a rich backdrop against which to analyse the data collected through the other methods described in this section.

This garnering of authentic information through access to field settings is only possible by developing a high level of trust (Bryman 2001). This was the most challenging part of using this method, as the researcher’s insertion into the research context was facilitated by ISET, an international organisation with strong links to the donor. This meant that initially the host organisations in Gorakhpur and in Indore were tacitly concerned about the audience for findings from this fieldwork and the manner in which the data collected by the researcher would be employed. This hurdle was overcome by deploying a number of tactics that included the repeated outlining of my role to most actors in the research setting with an emphasis on the fact that any data collected was for

academic purposes only and would in no way feed into the monitoring and evaluation or other oversight mechanisms instituted as part of the ACCCRN. Also, the researcher's regular and extended trips to the field sites over a 14-month-period steadily helped develop a positive working relationship and a degree of trust; this was complemented by the researcher updating the host organisation on interim research findings periodically.

Another related challenge with participant observation had to do with the researcher's ability to "fade into the background" and not disturb the research setting (Gomm 2004). Berg (1995: 96) too notes the importance of having "...the ability to be present in the setting, to see what's going on without being observed, and consequently to capture the essence of the setting and participants without influencing them." Initially, especially in the informal settlements where much of the participant observation took place, the researcher found that he became the focus of attention in community meetings or other interactions taking place between actors. This was partly because his position as an 'outsider' was palpable through his body language, accent and manner of dress. Initially this resulted in the researcher being treated with deference by those running the ACCCRN at the community level and potential beneficiaries. Many a times, the head of the project office in Maheva, Gorakhpur would pause while giving instructions to check with the researcher if what he was saying was sound, at other times community members when asked a question by a member of the project team would provide an answer but to the researcher who was observing the process. As 'fading into the background' is a hallmark of participant observation and necessary for garnering authentic data, very soon the researcher started to take measures to blend in better with the research setting. This included a slight alteration to the dress (the wrapping of a face-cloth/hand towel around the neck that is a common practice in Gorakhpur), the adoption of a local form of greeting (the raising of the right palm to the chest instead of a full *namaste*) and the partial adoption of the local idiom (for example, using 'we' instead of 'I').

Apart from overcoming challenges, the primary methodological consideration for the researcher was to engage with the research setting with as little preconception as possible. This is because,

...ethnographic research implies an open approach. It avoids as much as possible framing a research situation beforehand, for example through formulating particular, detailed questions...the fundamental awareness in

ethnographic research is that one has to learn gradually. (Desai and Potter 2006:183).

Berg (1995: 91) makes a very similar point when he notes “... one must enter *appreciating* the situations rather than intending to *correct* them.” In order to adhere to this principle of learning gradually through an open approach, ‘theoretical sampling’ was employed to guide participant observation. This is a process through which the researcher “...collects, codes and analyses his data and decides what data to collect next and where to find them, in order to develop his theory as it emerges...it is an ongoing process rather than a distinct and single stage,” (Bryman 2001:302). While sampling is usually thought of in the context of recruiting individuals as sources of data through interviews/surveys, there is literature on how it is important to designing ethnographies and could include much more than just people. Bryman (ibid) outlines how sampling must take into account time (key behaviours/processes in a research setting should be observed at various points in the day and year) and context (subjects of research should be observed in a variety of settings and physical locations)-and the researcher through repeated field trips over 14 months, adhered to these principles.

### 2.5.2 Interviews

The dominant research method employed by this research study was the interview. A total of 48 interviews were conducted, the shortest interview lasted for 4 minutes and the longest ran for 2 hours and 5 minutes, the average interview duration was approximately 45 minutes. These were administered to respondents at all levels of governance of the ACCCRN project –local (i.e. at the level of the slum settlement where the project was being implemented); city (i.e. the local NGOs charged with steering the project and the city advisory group); national (i.e. intermediary organisations that act as the link between the donor at the international level and the city partners); and international (i.e. the donor). A footnote against each direct quote from an interview notes the date on which the interview was conducted and the names of interview respondents are included in appendix 3<sup>3</sup>.

There are a number of different types of interviews but interviews conducted as part of this research followed the ‘semi-structured’ format. The defining characteristic of the

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<sup>3</sup> This format corresponds with the recommendation of a range of theorists including David and Sutton (2005:91) who note that “...it is best practice to ensure that personal identifiers are separated from data.”

semi-structured interview is that while a broad interview instrument exists, there is considerable scope for the interviewer and interviewee to deviate from it (Desai and Potter 2006). Here the “...questions are normally specified, but the interviewer is freer to probe beyond the answers in a manner which would appear prejudicial to the aims of standardization and comparability...These types of interviews are said to allow people to answer more on their own terms than the standardized interview permits...” (May 2001 :123). This type of interview is predicated on an acknowledgement of the way in which individuals understand the world different ways and allows the researcher to “approach the world from the subject’s perspective” (Berg 1995:33).

Following established protocols of conducting semi-structured interviews, the interviewer was careful to familiarise himself with the focus of the interview, structure the interview effectively, not use jargon and asked clear questions, gave the interviewee time to think and complete answers and listened attentively (Bryman 2004). Moreover he developed a clear idea of what he wanted to find out, in many interviews he pointed out inconsistencies in what was said, in respondents being interviewed more than once he related what is said to what has been previously said, clarified answers but tried to not impose meaning on them (ibid). Importantly, he tried to explain the purpose and nature of the research to all respondents. Language is an issue of great importance to the interview process. The researcher was lucky that most of the interview respondents spoke, Hindi or English, that is, languages he is proficient in. Most interviews that took place at the community and city levels were conducted in Hindi, those at the national and international levels were mostly in English. A number of interviews took place in a mix of Hindi and English-commonly referred to as *Hinglish*.

This is not to say that there were no challenges. First, based on a year’s theoretical inquiry and the perusal of important documents on the ACCCRN initiative, the researcher had prepared questions for interviews during his first few field visits in advance. Very soon after beginning fieldwork, the researcher realised that there were major differences in the way he understood the questions and the manner in which the respondents comprehended them. For instance, questions that were framed to explicitly gather information on ‘policy discourses’ did not elicit useful answers as it was a concept that most respondents were unfamiliar with. Another illustrative example of this initial divergence in how interview questions were perceived came in an interview where the

researcher asked the respondent's opinion of different 'actors' that had engaged with environmental issues; to this the respondent replied by asking the researcher if he was talking about 'actors' working in Bollywood or in Hollywood cinema! Berg (1995:40) comments on this aspect of interviewing to say "...the interviewer's language must be understandable to the subject; ideally, interviews must be conducted at the level or language of the respondents." This problem became progressively smaller as the researcher spent more time in the field, assimilated the local idiom and understood the frames of reference that needed to be employed in order to garner useful data through interviews.

Second, another problem was that many times what was intended to be an interview between the researcher and one other respondent became a group discussion. This was primarily because a number of interviews that the researcher conducted were with those working at the community level and took place in the neighbourhoods where the ACCCRN was unfolding. As such the physical setting of the interviews extended very little privacy to the researcher within which to ask questions. Therefore, the researcher had to deal with multiple answers to questions from a variety of respondents and sometimes had to encourage the intended respondent to voice her/his opinion clearly. This challenge was overcome in a number of ways that included using only answers elicited by the main respondent in analysis; politely requesting others gathered to give the researcher and respondent some privacy; and a few times, acknowledging that a group discussion was yielding rich data and continuing with it.

A third challenge that the researcher faced was around capturing data from interviews. While a voice recorder was used for most of the interviews, some respondents—particularly those working for the government either explicitly requested that no recording be made or appeared to be implicitly uncomfortable with it. David and Sutton (2005:90) comment on this to say "...the use of recording equipment, whilst highly recommended in terms of capturing the fullness of the interaction, may be off-putting to the interviewee." Therefore, in some cases the researcher had to think on his feet and switch to taking notes or in one case of an interview with a senior politician, commit the interview to memory and rapidly transcribe the highlights immediately on exiting the interview venue.

Sampling, or the method applied to select respondents, is a critical element of this method. After considering a range of possibilities, the researcher employed the ‘exponential discriminative snowball sampling’ method (Denzin and Lincoln 2005). This is a sampling process where the researcher starts with a small, core set of data sources and uncovers new sources through these, rejecting those that are not centrally aligned to the research design (ibid).

### 2.5.3 Focus Group Discussions

A focus group is a form of qualitative research in which a group of people are asked about their perceptions, opinions, beliefs and attitudes towards a product, service, or concept (Henderson 2009). Focus groups are different from other research methods in that their aim is not solely to acquire straight answers to the questions posed but sometimes to catalyse arguments as the way in which people, argue, interact, prevail and collectively make sense of certain situations can yield extremely useful data too (Bryman 2004). This point is particularly important in the context of this research project as the research questions aim to investigate the bearing that the nature of relationships, interests, agendas and ideologies have on the policy making process. Berg (1995) extends this point to note how a far larger number of ideas and issues can be elicited through group discussions than through individual conversations. David and Sutton (2004:92) mirror this point when they note that “This discussion, it is hoped, will be more detailed and wide-ranging than would result from a one to one interview.”

Therefore, not only did the researcher use focus groups to analyse the content of what was discussed but also to observe interactions between individuals in order to uncover the nature of relationships and power dynamics shared between various actors in the policy process. Berg (1995: 71) comments on this aspect of this method to argue that “...focus group interviews allow the researcher to observe a process that is often of profound importance to qualitative investigations-namely, interaction.” For instance, a part of the forthcoming research deals with the role of local ‘elites’ within the neighbourhoods where the ACCCRN was unfolding and it was group discussions that helped the researcher in determining who these elite participants were through the manner in which other participants deferred to them. Focus groups were conducted after the researcher had spent a period of time in the field as a participant observer and conducted a number of preliminary interviews. This allowed him to use group discussions to explore certain

issues that came up through these other methods, in greater depth (for example participant observation revealed problems in the inclusion of the lowest castes living in the Maheva neighbourhood of Gorakhpur within the ACCCRN, this was then explored further through group discussions). Potter and Desai (2006:156) examine this function of the focus group when they write, "...as focus groups encourage a 'reflexive capability', they are often employed to qualify or explore issues in depth that have been raised elsewhere in the research process."

Fourteen focus groups were conducted as part of this research, the shortest discussion lasted just 13 minutes with the longest extending to 70; the average focus group discussed lasted about 40 minutes. These were conducted only at the community level (i.e. at the level of the slum settlement where the project was being implemented) and at the city level (i.e. the local NGOs charged with steering the project and the city advisory group). A footnote against each direct extract from a focus group notes the date on which the interview was conducted and the list of participants are included in Appendix 3. Most focus groups were organised using the single category design that allow the comparison of one group to another within a category (for example, women and men residing in areas where the ACCCRN was being implemented) (Krueger and Casey 2009); while, a few followed the multiple category design the allows the researcher to make comparisons from one category to another category (for example, between the intended beneficiaries of the ACCCRN and the project team) (ibid). Focus groups were carefully set up to ensure a certain degree of homogeneity in every group but also sufficient variation so different opinions could emerge. Group size varied between five and 17. Purposeful sampling (where the researcher selects participants based on the purpose of the study) was employed to recruit participants for these discussions (Bryman 2004).

There were numerous challenges with employing this method. Firstly, these are an intensive method as it is difficult to arrange for participants to meet at a given time they require the arrangement of a proper venue and once complete are difficult to transcribe. Therefore, they were used in a limited way along with the other methods mentioned in this section. Secondly, focus groups carry the danger of being capitalised by certain dominant individuals in the group (Krueger and Casey 2009, David and Sutton 2004). For instance, in some discussions local elites dominated, in others individuals observing the discussions interjected and in some there were members who chose to stay as silent as

possible. Even though the researcher made all efforts to elicit adequate participation from those assembled, such dynamics of interactions between participants was in itself the type of data that the researcher wished to gather. Lastly, it has been observed that that focus group participants may express views that are more in line with mainstream thought in comparison with individual interviews where people may be more forthcoming (David and Sutton 2004); this was largely true for group discussions too. After the first few discussions, the researcher quickly became cognisant of this tendency and questions/discussion points were then phrased in a manner that encouraged group members to voice more individual points and counter-points.

#### 2.5.4 Document Analysis

Personal and official documents are understood to be a potentially rich source of data provided they are analysed systematically and the data gleaned from them is considered in conjunction with other research methods. Therefore, this thesis has relied on a bank of 56 important documents collected over a 20-month period (approximately). Of these 27 were technical documents, 18 were meeting and workshop reports, four were marketing or promotional materials, five were miscellaneous and two were project proposals. These documents most closely resemble 'public archival records' as they were intended for review/scrutiny by external audiences (Berg 1995).

First, this method was selected as documents were to be analysed in order to provide information on the ACCCRN project and used as a source of basic facts, figures and other data. Second, emphasis on documents analysis was laid as data collected through this was to be compared alongside that which was garnered through participant observation, interviews and focus group discussions to compare the versions of reality that they present about the resilience initiative. From the outset it was clear data from documents will only be revealing if they are analysed properly which entails searching for- "...first, the meanings that the author intended to produce, second, the received meaning as constructed by the audience in differing social situations, and third, the internal meanings that semioticians exclusively concentrate upon," (May 2001 P184). Another important aim of employing document analysis as a research method here was to make room for discourse analysis. Ways in which certain ideas are framed and imposed onto particular settings are not immediately evident from either observing people's interactions or by examining the content of their interviews. Therefore, a more

careful analysis of discourses (ways in which “versions of the world, of society, events and inner psychological worlds are produced”) is needed (Bryman 2004).

The collection and collation of documents began almost six months before the researcher went into the field. These initial documents included white papers, flyers and brochures on the ACCCRN initiative produced by the Rockefeller Foundation or other organisations steering the project. The most useful documents, however, were collected once the researcher started to get immersed in fieldwork. Gaining access to documents was not easy and while documents relating to the initiative in Gorakhpur became easier with time, those relating to the ACCCRN in Indore continued to be difficult to come by. In Gorakhpur, the researcher requested the Gorakhpur Environmental Action Group (his host organisation in the City) for number of important documents relating to the project in the first field visit, which in hindsight was not the best approach as a level of trust between the organisation and the researcher was yet to develop. Therefore, it took time and subsequent field visits to gather the documents as mentions of them came up in conversations and in interviews. In Indore, the ACCCRN was managed by TARU, a private consulting firm and as one member of the organisation told the researcher, they consider important documents relating to the project as their ‘intellectual property’. This combined with the fact that fieldwork in Indore was limited (which influenced the relationship that the researcher had with TARU) led to a relatively smaller number of documents on the initiative in Indore.

Even though a perusal of documents and their sorting started before fieldwork and went on through this, their careful analysis only started after fieldwork had finished and when data from interviews, participant observation and group discussions had been collated. Data from document analysis was used strategically in a number of ways. First, they were important in setting the context for the research by providing details on various processes and methodologies that the project followed (e.g. the processes followed for conducting vulnerability assessments). This was important not only in terms of empirical detail that but many times also helped in building a more complete conceptual picture of the resilience initiative (e.g. by shedding light on the manner in which the initiative conceived of vulnerability). Second, document analysis helped in the triangulation of information that then helped provide insight into the manner in which the resilience initiative unfolded. For example, certain interview respondents

highlighted the high degree of autonomy retained by communities in deciding priority areas of the ACCCRN but an analysis of certain documents revealed that many of these priorities of action had been decided before communities became meaningfully involved in decision-making (more on this in the sections that follow). Third, document analysis also helped the researcher to understand how different policy actors assimilated and understood key issues, which in turn provided insight into the politics of the resilience policy process. For example, the fact of resilience being a discourse that was external to the policy environment in Gorakhpur became clearer through perusing project documents from Gorakhpur that mainly discussed disaggregated climate impacts (e.g. water logging) and those produced by international organisations such as the ISET or Rockefeller Foundation that adopted a systems perspective to talk about climate change resilience.

As such the documents were analysed by employing hermeneutic approaches where the researcher seeks to bring out the meaning of the text from the perspective of the author (Bryman 2004); also here “the document may be located within a wider social and political context. Researchers next examine the factors surrounding the process of its production, as well as the social context,” (May 2001:183). Secondly, semiotic approaches were also employed for the analysis of documents, these “explain how the meanings of objects, behaviours or talk is produced, transformed and reproduced...The interpretant connects an expression or signifier (a word, a picture, a sound) with a content or signified (another word, image or depiction),” (ibid:194). This technique was especially helpful in inferring approaches to conceptualising vulnerability to climate change adopted by different actors involved in the ACCCRN through technical documents. Thirdly, as mentioned above, discourse analysis approaches were also used to examine documents, here documents are analysed as forums through which “social power is expressed,” and “may be viewed ‘as attempts at persuasion,” (ibid). Examples of this include documents prepared by the donor with criterion that had to be met by organisations hoping to receive funds, this in turn also extended to the Rockefeller Foundation the agency to shape action on the ground.

As attention needs to be paid to the quality of data gathered from documentary sources, the researcher followed three criteria for this proposed by Scott (1990): authenticity (technical soundness of the document), credibility (degree of distortion, error and

evasion) and representativeness (documents carrying anomalous data need to be acknowledged). Overall, the approach to document analysis was qualitative stressed the importance of reading symbols, tendencies, sequences, patterns and orders through deconstruction and interpretation, (May 2001).

#### 2.5.5 Data Analysis and Conceptual Mechanics

Grounded Theory was employed to guide the analysis of the data collected through the aforementioned methods. Grounded Theory "...aims to generate theories regarding social phenomena: that is, to develop higher level understanding that is "grounded" in, or derived from, a systematic analysis of data," (Lingard Et. Al. 2008: 459). This is particularly useful when the aim of the research is to describe a process' rather than test or verify an existing theory (ibid). The two main characteristics of Grounded Theory are first, that theory springs from data; and, second, that the approach is iterative as data collection and analysis proceed concurrently and impact one another (Bryman 2004). David and Sutton (2004:87) echo this point to note that "...it should be remembered that grounded theorists recommend that the qualitative researcher should shift the emphasis of their questioning as they go along." Researchers employing grounded theory have an understanding of literature relevant to their research and certain background assumptions (also referred to as 'sensitising concepts') but they "...neither develop nor test hypotheses," (Lingard et. al. 2008: 459).

These tenets were carefully embedded in this research in a number of different ways. Data collection was spread over nine phases over 14 months between July 2010 and August 2011. After each phase of data collection, the researcher engaged in data analysis that in turn helped define the next phase of data collection. More specifically, after familiarising himself with sensitising concepts from policy process and resilience literature, the researcher undertook the first phase of fieldwork that mainly entailed participant observation and interviews. In this very first phase, he realised that certain parameters of data collection (such as those that entailed probing interview respondents 'on policy discourses' in circulation) were not yielding useful data and altered the data collection. Also, after seven phases of fieldwork the researcher felt that he had reached 'theoretical saturation' (the point where new data is no longer illuminating or useful) with regard to a few parameters of data collection (such as those that attempted to map key policy actors and their roles) and therefore decided to amend the lines of inquiry

accordingly. In this way, there was a constant dialogue between analytical outputs emerging from the data and the process of data collection itself.

A key process within analysis informed by Grounded Theory is ‘coding’. This is most often a short phrase that “...symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data.” (Saldana 2009: 3). Unlike in quantitative analyses where coding is mainly a way of managing data, in qualitative analysis codes are used as the building blocks of theories (Bryman 2004). ‘Open coding’ was used first during analysis, “...this is the process of breaking down, examining, comparing, conceptualizing and categorising data,” (Strauss and Corbin 1990: 61), this was followed by axial coding (this allows data to be rearranged after open coding) and selective coding (this facilitates the further consolidation of key arguments) (ibid). These codes were applied to transcripts of interviews and focus group discussions. As an overwhelming majority of interviews and focus groups were in Hindi, they had to be translated into English as they were transcribed-though immensely time consuming, this task was not problematic as the researcher is fluent in both languages.

In drawing on the tenets of Grounded Theory, the research also suffers from certain drawbacks associated with this mode of data analysis. First, critics argue that it is virtually impossible to adopt an approach that is entirely based on Grounded Theory as all researchers undertake analysis with a pre-existing understanding of existing theories (Bryman 2004). Even though the research attempted to keep an open mind throughout data collection and analysis in order to build theory from the ground up, these stages of his research were preceded by a lengthy phase of theoretical study that could have tacitly influenced the way in which he sought to scrutinise the data collected.

As is evident from the preceding sections, semi-structured interviews were the dominant data collection method employed by this research. Yet the other methods played a vital role too. The examination and analysis of interviews would have been far weaker had the researcher not been immersed himself in the research context

## 2.6 Positionality

There is now a wide body of literature on the importance of ‘reflexivity’ on the part of the researcher and a number of theorists have highlighted the need for researchers to be mindful of their ‘positionality’ through the research process. For instance Hopkins (2007: 386) notes,

...the work of feminist and other critical geographers has been crucial in highlighting the importance of reflecting critically upon the multiple positionalities of the researcher and thinking through the ways in which various identities may influence and shape research encounters, processes and outcomes.

Sultana (2007:375) expands the argument to underline how conducting research especially in developing countries necessitates a negotiation with “...histories of colonialism, development and globalization,” and therefore, in these research contexts issues of ethics and reflexivity are paramount. While undertaking this research, the researcher was mindful of his positionality and a number of instances illustrated the bearing that such issues had on the process and output of his research.

In the first few field visits, it became apparent to the researcher that his integration into the research environment would not be as seamless as he had hoped and characteristics such as his accent, command over English, body language, style of dress and appearance etc. clearly marked him out as an outsider. Apart from these external characteristics that differentiated him, there were other less tangible attributes such as the fact that he was a researcher attached to influential organisations (that had a hand running the ACCCRN), had travelled internationally, had a high level of education and had a better understanding of the theoretical issues around climate change and resilience, that set him apart from those he was attempting to study. Importantly, the researcher did not initially appreciate the degree to which he would be seen as an outsider in the research settings, especially since he was an Indian national, was fluent in Hindi and grew up in broadly the same region of the country as the field sites.

The fact of his ‘otherness’ became most apparent when a member of the team working with the local organisation to which he was attached asked him if he was a foreigner! This resonates strongly with the observation made by Sultana (2007: 378) who says that, “...doing research at ‘home’ also brings in different dynamics, in terms of concerns of insider-outsider and politics of representation, across other axes of social

differentiation beyond commonality in nationality or ethnicity.” In light of this, through most of his fieldwork at the community level (i.e. within the informal settlements of Gorakhpur and Indore where much of his research took place), concerted attempts were made by the researcher in order to be perceived as less of an outsider and avoid, to the extent possible, the garnering of inaccurate data. Desai and Potter (2006:19) observe “...there is often a tendency for respondents to tell the researcher what they believe he or she wants to hear, especially when there is a marked power inequality between the two,” and therefore the researcher was continually cognisant of the need to reduce the inequities of power implicit in his privileged status.

Implicit within the preceding paragraph is an understanding of how the researcher was mindful of the fact that he hailed from a more privileged class background as compared with many other individuals in his research setting. Working in the context of informal settlements in second tier Indian cities with possibly some of the country’s most economically and socially marginalised people, the fact of the researcher’s more advantageous position in the class structure held the potential to influence research. At the level of the informal settlement where the ACCCRN was being implemented, the researcher’s privilege was, in the first few field visits, a barrier to full and frank discussions with different groups of respondents (volunteers, the local residents of informal settlements and the project team) for the reasons mentioned above. Interestingly, for a different set of respondents such as those working for government departments, experts and other city elites who were part of the project’s City Advisory Committee, the researcher’s class helped secure access and made way for rich discussion. Even though it is impossible to precisely map the reasons for this, the researcher felt that while his class background initially created impediments as it elicited ‘submissiveness’ from the local communities in which he was situated; more elite respondents felt valued that their opinion was being sought by a researcher from a ‘foreign university’, that their views would potentially be published as part of research outputs and possibly, that they would strengthen their own social/professional networks by engaging with the researcher who was obviously from a privileged class. Therefore, just as Scheyvens and Storey (2007: 186) note: “being an ‘outsider’ and playing up this aspect of one’s identity can actually work in the favour of the researcher...” as, among other things, ‘outsiderness’ can be perceived as non-threatening; while the researcher attempted to discard markers of his class when conducting research at the community

level in order to be considered an 'insider', he felt that the fact of his being an 'outsider' was advantageous for gathering data from elite respondents.

Conducting research in Gorakhpur and Indore was also a process of building trust. This was partly achieved by the researcher being constantly mindful of how he was being perceived by those in the research setting and by continually negotiating his positionality and identity (as described in the preceding paragraph). Building trust became important as the researcher gained access to the research setting through an internship that he secured with ISET (an influential international organisation allied to the Rockefeller Foundation- that was funding the ACCCRN). As such those running the initiative in Indore and Gorakhpur were initially hesitant to freely share information as they felt that the data gathered would act as means of donor oversight into their activities. As a result of this, the researcher had to take explicit as well as subtle measures to ensure that the intent of his research is made absolutely clear and that his efforts are clearly delinked from any internal accountability mechanisms of the ACCCRN initiative.

An example of one such measure was a presentation made by the researcher to the head of GEAG in Gorakhpur and TARU in Indore about his research plan and objectives of his PhD. More subtle trust building measures including the researcher's contribution to the organisations to which he was attached. For example, he helped ISET with the documentation of a large workshop that they hosted and helped GEAG write project proposals and reports from time to time. As result, by the end of his research he enjoyed strong relationships of trust and these organisations felt comfortable in sharing sensitive information (such as those around budgets) with him. Scheyvens and Storey (2007: 186) observe, "Of critical importance perhaps is striking a balance between being an insider and an outsider and cultivating the ability to represent oneself according to the situation." Similarly, the researcher had to make his position of being outside the formal systems of the ACCCRN clear yet had to build trust by consolidating his position as someone who could be trusted and was a 'team player'.

Much of the debate around positionality while conducting ethnographic research is elicited in the context of researching women and other groups that have historically suffered from social marginalisation (Desai and Potter 2006). Therefore, the researcher

entered the research setting with a view to being very careful in engaging with female respondents in interviews and group discussions. Due to paternalistic social norms that are prevalent through large parts of the country, he was prepared for access to women to be difficult. The reality, however, was quite different. The researcher was struck by the degree to which women were present in the ACCCRN (especially in Gorakhpur) and how vocal they were in making their views evident. Almost 50% of the volunteers helping link the local residents of Maheva, Gorakhpur with the ACCCRN were women and a similar gender balance existed within the team running the project at the local level. In group discussions with the volunteers and with the local residents women respondents were confident in putting their views across and even adding to or contradicting what was said by their male counterparts.

There are a number of possible reasons for this but one that was palpable included the fact of there being a large number of female headed households in certain parts of the Maheva as their partners had succumbed to the scourge of illicit alcohol. As this thesis will explore, consumption of illicit liquor affected many families in Maheva— anecdotally, in some localities within Maheva almost 90% of the households had a male member who was addicted (and therefore debilitated by its effects). Empirically, it was the second highest cause of death in Maheva<sup>4</sup>. This left women in positions of authority over families and livelihoods—leading to a culture that did not prevent women from interacting with outsiders such as the ACCCRN project team and the researcher. After much reflection the researcher feels that the dynamics of his engagement with women respondents was only slightly different to his engagement with men through the course of his research. This was not only because women respondents in his primary field site were more forthcoming than he expected (for the reasons mentioned above) but also because the research at hand was not focused on gender dynamics, issues of sexuality or other such sensitive topics that would possibly lead to a marked differentiation in an engagement between men and women.

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<sup>4</sup> As determined by a household survey conducted by GEAG in Maheva prior to starting activities.

### 3. Key Literature and Analytical Framework

This section will examine the key pieces of literature that the data/findings from primary research interact with and will present the framework that has been employed to undertake and organise data analysis.

#### 3.1 Resilience

Resilience is increasingly employed as a concept to guide practice on climate change and development. There has been a marked spike in academic interest around this subject in the last decade and corresponding with this, an increasing number of organisations are attempting to integrate the tenets of ‘resilience thinking’ in their work (Swanstrom 2008). Academic resilience thinking has many meanings, traversing a number of disciplines and communities of practice, such as psychology, engineering, business and technology innovation, and the social sciences.

##### 3.1.1 The resilience concept across disciplines

The term resilience is encountered in many disciplines, but no definition is common to all. Different elements or attributes of resilience are emphasized, but all definitions speak in a general way to the continued ability of a person, group, or system to adapt to stress—such, as any sort of disturbance—so that it may continue to function, or quickly recover its ability to function, during and after stress, (CPSSC 2011: 13).

In the field of Psychology, “...resilience is defined as the quality that prevents individuals who are at genetic risk for maladaptation and psychopathology from being affected by these problems,” (Cicchetti et al. 2004: 17325). The field of structural and engineering science has also explored and employed resilience. For example, the concept of seismic resilience of buildings understands it to be the property of a system which has: “1. Reduced failure probabilities; 2. Reduced consequences from failures, in terms of lives lost, damage, and negative economic and social consequences; 3. Reduced time to recovery” (Bruneau and Reinhorn 2006:1). This has underpinned ideas around climate resilient design that dominate adaptation discussions related to infrastructure (McDaniels et al. 2008).

Economic theory has incorporated resilience thinking in terms of the internal motivation and stimulus of private or public policy that enables a system to recover from a severe shock (Rose 2004). Economic resilience has been applied at micro level (individual

behaviour of firms, households or organisations), meso level (economic sectors, individual markets, cooperative groups, or cities), and macroeconomic (all individual units and markets combined) (ibid). At county level, this has been particularly significant in small island economies in relation to economic openness and natural hazard-induced disaster events, as well as to regional and urban development elsewhere (Briguglio et al. 2009). Business management approaches have also drawn on resilience as a strategy to manage disaster impacts, including from property damage to stocks and indirect business interruption to flows (Webb et al. 2000).

Moser (2008:5) reviews understandings of resilience in the social sciences to argue that most theories in this domain are "...derivative of the ecological theories from which resilience first emerged." There is widespread consensus amongst social and natural scientists that studying resilience involves the adoption of cross-disciplinary and multidisciplinary methods, as natural and social systems are highly integrated (Folke 2006). While a high degree of interconnectedness between social and ecological systems is widely acknowledged, theories have emerged that are based variously on an understanding of resilience in social systems (or social resilience), those that stress resilience in ecological systems, and those that see the two as highly interconnected.

The Socio-ecological System (SES) has emerged as a conceptual entity that can give the social and ecological systems the same weight in their analysis (Folke 2006). These are "... linked systems of people and nature. The term emphasises that humans must be seen as a part of, not apart from, nature – that the delineation between social and ecological systems is artificial and arbitrary," (Simonsen 2007). Mayunga (2007) acknowledges the interconnection of human and ecological systems by stating that both natural capital (air, soil, etc.) and social capital (trust, norms and networks) have a role in determining the resilience of a system. This is in contrast to Folke (2006), who does not isolate human/social and natural/ecological factors, seeing them instead as a highly integrated, systemic 'whole'. This understanding of resilience has led to a substantial amount of interest in the social sciences "...where it is applied to describe the behavioural response of communities, institutions and economies," (Klein et. al. 2003:39). Central to resilience thinking in socio-ecological systems is the adaptive cycle through which all systems go through four phases – 'exploitation, conservation, release and renewal' (Gunderson and Holling 2001: 5). Closely associated with this is the notion of

‘Panarchy’ that explains how adaptive cycles are simultaneously taking place within system components at different scales (more on the adaptive cycle and later) (ibid).

### 3.1.2 Tenets of Resilience Thinking

Given the crosscutting and cross-sectoral nature of climate change vulnerability, impacts and adaptation, the literature reviewed is necessarily focussed. It engages with literature from social science-ecology interface, and aims to capture the breadth of literature in particular related to society, ecology and socio-ecological systems. This is because first, a substantial number of theorists (cited through the sections to follow) who discuss resilience as a way of engaging with climate change impacts (the primary purpose of this paper) operate in these contexts. Second, within the social sciences (the epistemological context of this research) most discussions on resilience have been routed in social and ecological systems and have moved towards operating in the context of the coupled socio-ecological systems (SES) (Moser 2008). Third, a vast majority of the world population across rural, urban and peri-urban areas most vulnerable to climate change impacts and disasters, directly relies on ecological services for livelihoods and wellbeing (through, for instance, a reliance on agriculture) (ISET 2008). Engaging with the social and ecological dimensions and the nature of their interaction therefore provides a central axis for analysing ‘resilience’ in the context of climate change. Finally, the resilience approach that is the case study for this research project is placed firmly within this epistemological domain (Rockefeller Foundation 2009).

There are a number of ways in which the concept of resilience could be reviewed, here, key pieces of literature are analysed to distil certain overlapping tenets or principles of resilience thinking<sup>5</sup>.

First, diversity is frequently cited in the literature as fundamental to resilience (Folke 2006; Holling 1973; Resilience Alliance 2002; Carpenter et al. 2001). Klein et. al. (2003: 39) underline the recurring theme of diversity within the body of thought on

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<sup>5</sup>This section draws on-

- A) Bahadur, A. Ibrahim, M. Tanner, T (2013) Characterising Resilience. Climate and Development. DOI:10.1080/17565529.2012.762334 28th January
- B) Bahadur, A. Ibrahim, M. Tanner, T (2010) The Resilience Renaissance? Unpacking of Resilience for Tackling Climate Change and Disasters, Brighton: IDS SCR Working Paper

ecological resilience to note that "...many ecologists argue that resilience is the key to sustainable ecosystem management and that diversity enhances resilience, stability, and ecosystem functioning." Holling (1973) was one of the first to argue that high diversity in the range of functional groups within a system is seen to contribute greatly to its resilience. This underlines the importance of nurturing ecological diversity but also stresses the need for a range of available economic opportunities, a diversity of partnerships, and "the significance of bringing additional constituencies into the policy arena," (Berkes 2007: 289).

Different forms of diversity are interrelated. For instance, "rural livelihoods and well-being are strongly dependent on the diversity and health of ecosystems and the services they provide," (ibid: 289). Cutter et. al. (2010) point out that single-sector economies are less resilient and more prone to being affected by extreme events. Adger (2000) emphasises the importance of communities relying on diverse natural resources as it insulates them from the "boom and bust nature of markets", environmental variability and extreme weather events, which may adversely impact some resources. This point is also elucidated by Norris et. al. (2008: 134) who note "Communities that are dependent on a narrow range of resources are less able to cope with change that involves the depletion of that resource." Diversity may also be reflected in the variety of stakeholders engaged in an adaptive process, for instance, Osbahr (2007) demonstrates the importance of stakeholder diversity to the continued operation and success of an agriculture-horticulture project. The Rockefeller Foundation (2009: 2) highlights a diversity of planning, response and recovery activities as an essential component of resilience to climate change because "a diversity of options has greater potential to match the particular scenario of impacts that occur."

This point on diversity is also related to another and argues that resilient systems have perspectives that transcend the specificities of the local and take a broader view of events. Holling (1973) compares the resilience of fish stocks in a closed, local ecosystem like that of a lake to that of pest populations that are highly dispersed in space and time to find that the latter are far more resilient. Nelson et. al. (2007) argue that networks which transcend a diversity of scales are found to have greater resilience. Similarly, the Committee on Disaster Research in the Social Sciences of the National Research Council (2006) embodies this principal when it highlights the importance of

‘vertical integration’ of communities to their resilience to disasters. Vertical integration is described as ‘structural and functional relations of [a community’s] various social units to extra community systems,’ and is seen to be important for a number of reasons but also because it “helps to expand the resources (funds, expertise, influence, and so forth) potentially available to the community,’ (ibid: 233).

Second, a number of different approaches stress the value of effective governance and institutions in building resilience. Mayunga (2007) stresses the importance of trust, norms and networks within a system, perhaps manifested through a large number of credible civil society institutions such as religious organisations and recreational clubs. Adger (2000: 351) examines how institutions must be seen as legitimate which in turn is a product of the level of “inclusivity or exclusivity, and hence how effective they are in oiling the wheels of society.”

A key theme running through resilience thinking is the need for decentralised organisational structures and policies. These are regarded as more flexible to cope with change and more in touch with the needs of communities and local realities (Folke 2006; Rockefeller Foundation 2009; Ostrom 2009; Dovers and Handmer 1992; Osbahr 2007). Osbahr (2007: 14) notes that “governance, the structures and processes by which societies share power, shapes individual and collective actions and can be formally institutionalised.” There is therefore a need for “polycentric and multi-layered institutions to improve the fit between knowledge, action and the context in which societies can respond more adaptively at appropriate scales” (ibid: 14). Carpenter et. al. (2001: 778) underline the importance of institutions that can facilitate learning and “experiment in safe ways, monitor results, update assessments, and modify policy as new knowledge is gained.” Experimentation is also seen as key to maintaining the stability of a ‘system’ (Bulkely and Broto 2012). Dodman and Satterthwaite (2008:69), writing in the specific context of urban resilience also note that characteristics such as decentralisation, autonomy, transparency in city governance structures “...are all vital in boosting the resilience of cities to disasters and climate change.”

Third, resilience thinking is closely associated with the ability of systems to deal with uncertainty and change (Folke 2006). Dodman et. al. (2013:27) argue that resilience “...implies a capacity to cope with unexpected or uncertain risks.” Underlining this

characteristic of resilience, Norris et. al. (2008:130) note that ‘stability’ or the failure to change could be a way of determining the lack of resilience:

The resilience of systems, for example, depends upon one component of the system being able to change or adapt in response to changes in other components; and thus the system would fail to function if that component remained stable, (ibid: 130).

Writing specifically in the context of urban systems, Ruth and Coelho (2011: 332) note “...novelty and surprise are unavoidable features of system development.” Similarly, the Asian Cities Climate Change Resilience Network (ACCCRN), stresses the need for “...flexibility at an individual, organizational, and systemic level, with each level able to respond and contribute to each situation, and to respond to shifting and unpredictable circumstances” (Rockefeller Foundation 2009: 2). This may be manifested, for example, as decentralised decision-making systems within organisations that have a role in determining the resilience of systems.

This extends into an understanding of how resilience is akin to a non-equilibrium approach. This approach argues that restoring equilibrium may return a system to a state where it is vulnerable to the impact of the same perturbation again. Holling (1973: 2) engaged with this characteristic in his analysis of the resilience of ecosystems, arguing that,

...an equilibrium centred view is essentially static and provides little insight into the transient behaviour of systems that are not near the equilibrium. Natural, undisturbed systems are likely to be continually in a transient state.

While inherently linked to accepting ‘uncertainty and change’, this characteristic adds another element. This demonstrates that rather than working towards making systems return to stable states after a disturbance, there needs to be a recognition that there are sets of relationships amongst a number of different system elements and each is organised around individual equilibriums (ibid). A disturbance may change the position of these components within a system, but the system will persist as long as the relationships between these components remain similar (ibid). This persistence of relationships then becomes a measure of the system’s resilience. Folke (2006: 253) also refers to this characteristic when he writes,

Old dominant perspectives have implicitly assumed a stable and infinitely resilient environment where resource flows could be controlled and nature

would self-repair into equilibrium... The resilience perspective shifts policies from those that aspire to control change in systems assumed to be stable, to managing the capacity of social-ecological systems to cope with, adapt to, and shape change.

Similarly, an analysis of resilience in a part of the Dutch coast constructed a picture of a coast that is

...continuously changing, so no original or equilibrium state can be identified. Moreover, perturbations are not isolated events from which a coastal system may or may not recover, but are ever-present and occur at different temporal and spatial scales, (Klein et. al 2003: 39) .

Fourth, community engagement, ownership, participation and indigenous/local knowledge are frequently stressed in the reviewed literature (Manyena 2006; Mayunga 2007; Ostrom 2009; Nelson et al. 2007; Dovers and Handmer 1992; Berkes 2007; Osbahr 2007, Norris et. al. 2008, CDRSS 2006). Manyena (2006: 438) critiques the United Kingdom's Resilience Programme and finds that while "it will improve the coordinated response capabilities of emergency services and other government agencies," it fails to involve the community. This, he argues, is the group who will inevitably have to combat emergency situations if the scale of disturbance overwhelms the official response capacity. This is also reflected in the National Research Council report by the Committee on Private-Public Sector Collaboration to Enhance Community Disaster Resilience (2011:5) that stresses the importance of representatives of the 'full fabric' of the community being represented in decisions related to the disaster cycle is considered critical to the development of community resilience. Similarly Norris et. al. (2008: 143) speaking in the context of building community resilience to disasters, extend this argument by adding, "...community members must assess and address their own vulnerabilities to hazards, identify and invest in their own networks of assistance and information;" they claim that while individuals from outside local communities can help build an enabling environment to foster recovery, communities must be empowered to "take charge of the direction of change." The Committee of Disaster Research in the Social Sciences notes (2006: 237) 'engagement' as one four core principles of building resilience to disasters, they believe that,

Development actions that address disaster reduction (and other significant issues) must be formulated through a fair and equitable process that provides an opportunity for all affected parties to participate.

Ostrom (2009:438) advocates greater ownership of natural resources within the system by its users arguing that when users have “full autonomy at the collective-choice level to craft and enforce some of their own rules, they face lower transaction costs as well as lower costs in defending a resource against invasion by others.” This notion of co-management or greater ownership of resources by communities is raised by Nelson et. al. (2007: 409) who argue that “the strong normative message from resilience research is that shared rights and responsibility for resource management (often known as co-management) and decentralisation are best suited to promoting resilience.” A similar sentiment is espoused by Dodman et. al. (2009) when they note that rights and resources are key to building resilience. Berkes (2007) highlights the use of different forms of knowledge as one of four key areas of resilience in the context of climate change, and says that community-based monitoring and indigenous observations are significant in this regard because they fill in the gaps of global science and provide insights regarding local impacts and adaptations.

Fifth, preparing and planning for disturbances also characterises resilient systems. Cutter et. al. (2008a: 4) speaking of hazard mitigation note, “Federal, state, and local governments throughout the United States are slowly coming to realize that planning is an important tool for increasing resilience.” Planning requires relevant and timely information, as well as embedding disaster preparedness plans within existing institutional processes, such as district and local development plans. Dodman et. al. (2009) also highlight ‘better systems for disaster preparedness’ as key to building resilience. Another aspect of preparedness is redundancy (Bruneau 2003). This is when “processes, capacities, and response pathways within an institution, community, or system allow for partial failure within a system or institution without complete collapse” (Rockefeller Foundation 2009: 2). Norris et. al. (2008: 134) also discuss redundancy as a key property of resilience and understand it to be “the extent to which elements are substitutable in the event of disruption or degradation.” Ruth and Coelho (2011), speaking mainly in the context of urban areas, note that investing in redundancy is a key component of preparing of disturbances. Secondly this approach underlines the necessity of “planning for failure”, “so that break-downs happen gracefully, not

catastrophically – for example, when flood gates break, they do so in a way that channels floodwaters to uninhabited flood zones” (Rockefeller Foundation, 2009:2). Dodman et. al (2013) also note that resilience is synonymous with systems changing as a result of disturbances but not failing or breaking down. Planning for failure can be operationalised by decentralised organisational structures, so that the failure of the central authority does not lead to system collapse, and through the explicit inclusion of system failure scenarios in any response plans.

Sixth, a number of theorists engage with the idea that a high degree of equity in a system leads to its increased resilience (Adger et. al. 2002; Nelson et. al, 2007; Adger 2000; Twigg 2007, CDRSS 2006). Equity considerations relate to any changes to the resilience of human systems as these will involve changes in the distribution of impacts from disturbances. Equally, systems may become less resilient where issues of justice and equity are not taken into account (Nelson et al., 2007). Cutter et. al. (2010) examine the resilience of regions in 8 states of the U.S. to argue that regions with higher equity are likely to be more resilient.

Twigg (2007) specifies the equitable distribution of wealth and assets and an equitable economy as essential to building community resilience. Adger (2000: 355) links stable livelihoods with sustained economic growth, itself promoted over the long term by the “equitable distribution of assets within populations”, linking this to both enhancement of aggregate demand within the economy and workforce productivity. The Committee on Disaster Research in the Social Sciences of the National Research Council (CDRSS 2006: 222), binds the notion of resilience to the idea of sustainable development and equity to argue that to increase resilience there is a need to “...improve equity within generations by providing for sufficient low-cost, low-risk development opportunities for the least advantaged.” Cannon (2008) also stresses this point and demonstrates that higher inequality results in reduced resilience.

Seventh, social capital, built on trust, norms and networks is cited as an important element for building resilient systems (Mayunga 2007). Robust civil society institutions are viewed as able to foster cooperation and coordination in a community, this in turn can lead to a greater amount of trust and respect amongst its members and more equitable access to resources and greater resilience (ibid). Norris et. al. (2008) count

social capital (which is a combination of social support, social embeddedness, organisational linkages, leadership, sense of community and attachment to a place) as one set of resources that generate community resilience. The Committee on Disaster Research in the Social Sciences of the National Research Council (2006) mentions social capital as a key element of a community's resilience to disasters and argue that social capital fosters social networks that create interpersonal trust. This in turn, allows the community to solve problems effectively, build consensus and reduce conflict (ibid). Cutter et al. (2010:9) too discuss the importance of social capital to resilience and interpret this as "...sense of community, place attachment, and citizen participation." Ostrom (2009) discusses the capability of system users to organise for better ecosystem management, arguing that a high degree of trust and shared ethical standards makes it easier to reach agreements and also reduces the need to carefully monitor resource use by different users. Twigg (2007) also says that shared community values are a characteristic of disaster-resilient communities.

Eighth, a number of theorists reviewed here highlight the need for iterative program processes and organisational learning to promote resilience. Learning is also central to the notion of adaptive management (Gunderson and Holling 2001). This considers a range of plausible hypotheses about future changes in the system, weighs a range of possible strategies against this wide set of potential futures, and then favours actions that are robust in the face of uncertainties (Wilby and Desai 2010). Moser (2008: 17) underlines the inherent importance of learning to the idea of resilience to note,

...resilience means more than just responding to, and bouncing back after, an extreme event. It also involves the capacity to change and adapt to changing environmental conditions, and that, in turn, requires the essential abilities to cooperate, learn, and apply the lessons toward continued resilience under future conditions.

O'Brien and O'Keefe (2010:378) note that "...learning can enhance the capacity to prepare an effective response to disastrous situations." They go onto argue that organisations engaged in dealing with disasters need to understand the vital importance of double loop learning and intrinsically link learning and resilience to claim that "...resilience building is a learning process at all levels. Institutional learning empowers at the local level and strengthens governance," (ibid:381). A good example of how

learning can be built into programmes aimed at building resilience and adaptive capacity are Shared Learning Dialogue methods that involve

... multiple opportunities to share, generate, and understand new knowledge. Multiple iterative sessions allow for sequential growth in understanding and typically lead to increased levels of comfort and more meaningful dialogue among participants (ISET 2010 :2).

### 3.1.3 Gaps in Resilience Thinking

After looking at the tenets of resilience thinking, this section will examine the gaps in resilience thinking and its dominant critiques. At the broadest level, critiques can be clustered around two sub-heads: a) the lack of a normative element in resilience and b) the lack of emphasis on issues of power and politics in the thinking on the concept.

#### *3.1.3a Lack of Normativity*

The concept of resilience, as it has been discussed in this section, is not inherently invested with a direction or goal, is ambiguous regarding the subjects and objects of resilience building (“Resilience toward what? For whom?” Swanstron 2008:19) and is relatively silent on the issue of how resilience need not necessarily be a positive property.

As resilience springs from very diverse epistemic roots and there is a disagreement among theorists about how to define and measure it, many have charged resilience with not having being naturally imbued with a direction of goal towards which it must proceed (Boyden and Cooper 2006, Leichenko 2011). This is related to ambiguity within resilience thinking on spatial dynamics; those that examine resilience in socio-ecological systems think of it as a property that is necessarily place based but those that take socio-technical systems (STS) as their unit of analysis contest this notion as the STS operates across spatial-temporal scales (e.g., energy systems) (Berkhout 2008). Associated with this is the issue that studies of resilience in psychology reveal that the concept is only relevant when there is “risk” (Boyden and Cooper 2006). And defining or determining risk is a highly subjective issue that is predicated on individual values (ibid).

In extension to the ambiguity regarding direction or goal is the notion that resilience is only relevant when applied to particular ‘objects’ in the context of individual ‘subjects’

(Smith and Stirling 2010). There is a need to carefully understand what is being made resilient in the face of which disturbance as there are a number of trade-offs involved in the process. This includes trade-offs in scale where building resilience at one scale may have negative repercussions for resilience at other scales; and trade-offs between groups where resilience for one group within a system may come at the cost of resilience for another group (Berkhout 2008). ‘Point of view’ is another critical factor in the resilience-building processes. One theorist employs a case study of child labour to argue that this could be seen as a strategy that enhances household resilience or be seen to diminish it (Boyden and Copper 2006).

Another way in which resilience lacks a normative component is through the possibility of “negative resilience”. This is partly due to the failure within resilience thinking in distinguishing between the resilience of certain functions and the structures put in place to achieve them: for instance, constant electricity supply may be desirable but the resilience of current fossil fuel based methods to provide this may not (Berkhout 2008). Apart from the trade-offs between structure and function, there could be trade-offs between resilience in the short term and in the long term, where building in resilience now could lead to the erosion of resilience at some future point (Smith and Stirling 2010). Also, resilience does not pay adequate attention to trade-offs between human well-being and environmental services by acknowledging the ways in which conditions of society (human health, livelihoods, etc.) can come at the cost of environmental services (ibid, Dodman et. al. 2009). Apart from the issue around ‘trade-offs’, some including Dodman et. al. (2009) also note that resilience can sometimes be interpreted as the ability of systems to ‘return’ to the state in which they existed prior to a disturbance and this pre-existing state may not always be positive.

### *3.1.3b Lack of Emphasis on Issues of Politics and Power*

Along with the lack of a normative element within resilience, theorists have also critiqued the concept for the lack of emphasis on how issues of politics and power mediate responses to disturbances.

Theorists trying to explore the value of resilience to engaging better with climate change and disasters argue that it is strongly functionalist and technocratic in its understanding of the challenges people face. They argue that it is sharply focussed on

changing practices and policies without adequately acknowledging the inherent political complexity in issues of managing risk (Kuhlicke 2010); and that resilience, in being sharply focused on responding to challenges, does not pay adequate attention to the structures and forces that shape these challenges (Swanstrom 2008). Some have also argued that resilience foregrounds the technical and the rational while paying inadequate attention to the human and social (Cannon and Muller-Mahn 2010). Resilience brings a 'systems perspective' for understanding interlocked social-ecological-technological processes and in analysis across multiple scales, whereas, vulnerability chooses to concern itself centrally with actors (Jasonoff 2008). Similarly, there also seems to be a lack of emphasis on how the concept of resilience is framed or interpreted differently by different people in a system (Turner 2008). There is a need to highlight how people and groups frame/seek systems that are resilient for realising their particular needs or the persistence of their institutions (ibid). Closely associated with this is the charge of "incrementalism" that is levelled at resilience thinking. Theorists argue that through its sharp focus on the development of practices to manage change (through concepts such as adaptive management) it ignores transformative changes that may be needed to rout particular unsustainable structures (Leach 2008).

The body of literature reviewed also finds that in crossing over from a concept considered mainly in the natural sciences such as ecology to social contexts, resilience loses some of its tenability as a construct to understand and prepare for change. Turner (2008) discusses the weaknesses of conceptually coupling social and environmental systems, and says that numerous historical examples prove that environmental systems may complete cycles of creative destruction, but social systems attached to these may not or vice versa (ibid). Ernston et. al. (2010) also point out problems with uncritically coupling human and environmental systems as the former are centred around subjective beliefs and values whereas the latter are purely functional. Others have critiqued resilience for its somewhat limited understanding of risk owing to its roots in the relatively neutral realm of the natural sciences. They claim that it imposes a rationality that is incongruent with the complex reality of how socio-economic issues combine with ecological systems (Cannon Mueller-Mahn 2010). Finally, there seems to be a growing understanding of the lack of adequate engagement with the political in resilience thinking. The argument here is that resilience in ecology does not adequately address the ways in which risk/changes/disturbance can be actively constructed and

...we do not start from a state of nature but from a civil society in which resilience is shaped by laws, policies, and very human institutions...when applied to human systems, ecological resilience overlooks the crucial role of authorities in both nurturing and undermining resilience (ibid:16).

While there has been a substantial increase in the level of rigorous analysis exploring the nuances of the resilience concept and its potential to help communities better deal with a range of disturbances, there is a clear lack of understanding of how this concept interacts with organisational and institutional environments (Garschagen 2013). For example, a case study from Vietnam demonstrates that resilience, with its emphasis on flexible systems and acknowledging uncertainties, is incongruent with a policy environment that is "...characterised by notions around centralised control and command, manageable steady states, the preservation of the status quo, linear developments, reactive response, stability, predictability and neglect of uncertainties" (ibid:15). One of the reasons for examining the congruence of resilience with organisational and institutional culture is that lack of clarity on how more complex elements of resilience theory (e.g., multiple stable states, Panarchy, etc.) can be translated into concrete guidance for those executing initiatives in the sphere of climate change and development (ibid). The emphasis on theorisation can be an impediment in getting climate change and development practitioners to buy in to the concept as "...practitioners – particularly at decentralised levels – are less interested in theoretical academic discourses but seek workable solutions for day-to-day problems" (ibid:16). Overall, more clarity is needed on how resilience interacts with the existing politics, norms, values, planning paradigms and regulative regimes of the institutions that it seeks to be embedded in (Garschagen 2013).

#### 3.1.4 Resilience and Vulnerability

After reviewing a wide body of literature to distil the tenets of resilience, this section will review its relationship with vulnerability. There is a substantial variety in how the idea of vulnerability has been conceived by theorists: Cannon (2008: 2) goes to the extent of saying that "Vulnerability has become one of those slippery terms (like 'sustainability') that is now used to signify so many different things that it is in danger of losing any real meaning." A review of key literature in vulnerability reveals that its conceptualisations fall into four broad categories. First, one interpretation of the term

acknowledges vulnerability to be a characteristic of a system that exists within it independently of external factors. It is determined by the way in which society functions and the manner in which relationships within it are structured, at times this is also referred to as inherent vulnerability (Brooks 2003, Brooks 2005, Blakie et al. 1994, Smit and Wandel 2006, Dow 1992, O' Brien et. al. 2004, Alwang et. al. 2002, McLaughlin and Dietz 2008, Lankao and Qin 2011, Blakie et al. 1994, Cannon 2008). Second, closely associated/overlapping with the first school of thought on vulnerability is another that gives credence to political and economic factors such as assets, entitlements and institutional structures and seeks to move towards empirical measurements of vulnerability through quantifiable metrics (Adger 2006, Leary 2002, Prowse 2003, Cannon 2000, Adger and Kelly 1999, Blakie et al. 1994). A third set of approaches are clearly distinguishable from the first two in that they do not consider vulnerability to be largely a result of underlying pre-existing 'drivers' (poverty, inequality) but of physical, natural and structural factors that are often external to the system in question (Brooks 2003, Dow 1992, O' Brien et al. 2004, Adger 2006, Smit and Wandel 2006). Finally, there are integrated approaches that borrow elements from the first three discussed above (Moser 1998, Chambers 1989, Gallopin 2006, Fussel 2007). Ever since researchers and practitioners started to consider the value of resilience as a means of engaging with change, there has been considerable debate on the relationship of this concept with the notion of 'vulnerability'. This section while drawing more on the first two schools of thought employs these diverse understandings of vulnerability.

There are clear points of difference between vulnerability and resilience. First, theorists have pointed out the different epistemic origins of the two concepts. Resilience (as used in the context of climate change) springs from the natural sciences, is seen as more 'positivist' and emphasises the ecological and biophysical; vulnerability, on the other hand, speaks more to the social sciences, is more 'constructionist' in its approach and has a tradition of engaging with the socio-political (Jansenn and Ostrom 2006; Miller et. al. 2010; Cannon and Mueller-Mahn 2010). This point also leads into an observation of how both engage with issues of governance but resilience has a more apolitical approach as compared to "...the more politically nuanced understanding of social change and equity present in much vulnerability research," (Miller et. al. 2010: 6). Cannon-Mueller Mahn (2010:3) extend this to argue that vulnerability is rooted in economic and political processes and is centrally concerned with issues of power that

are overlooked by the more “scientific” and rational concept of resilience. Second, there are differences in the manner in which they engage with time and space. Resilience, with its emphasis on systemic cycles of creative-destruction, tends to adopt longer time horizons; whereas certain approaches to vulnerability (such as those centrally concerned with hazards) tend to engage with shorter time horizons (Miller et. al. 2008). Also, resilience adopts “...the ecologically bounded scales of the ecosystem, landscape, and region,” and “...vulnerability research tends to consider socially defined scales of the household, community, region...” (Miller et. al. 2010: 10). Finally, there are differences in the units of analyses adopted by these concepts. Vulnerability approaches tend to adopt actor-oriented approaches and resilience is centrally concerned with system dynamics (Miller et. al. 2010). Therefore, some contend that vulnerability is focussed on people at the “grassroots” and social processes that expose them to risk, but resilience depoliticises these processes and “subsumes politics and economics into a neutral realm” of systems thinking (Cannon and Mueller-Mahn 2010: 13).

At the same time, there are a number of points of connection and certain synergies between vulnerability and resilience too. First, at the highest level, both concepts are centrally concerned with how individuals and systems anticipate change, in terms of both-“shocks and surprises, as well as slow creeping changes,” as also with institutional responses, networks and knowledge systems as means of responding to such changes (Miller et. al. 2008: 3). Second, many theorists have tried to understand their relationship conceptually. Some argue that resilience is the opposite of vulnerability and the increase in resilience implies a decrease in vulnerability (Gaillard 2010). At the same time there are others, who consider “resilience as one of the components of vulnerability,” (ibid: 301). Lankao and Qin (2011: 145) argue that vulnerability and resilience as “...two overlapping inherent properties” of people and places. Cannon (2008) suggests that resilience and vulnerability are inversely proportional. Gallopín (2006) argues that resilience is strongly akin to adaptive capacity/coping capacity that is a component of vulnerability. Still others consider vulnerability to be “the current baseline that establishes pathways of adaptive management which (might) lead to resilience. In this case, vulnerability is static...and resilience an outcome,” (Bharwani et. al. 2008:7). Despite this diversity of opinion on resilience-vulnerability dynamics, what becomes clear is a consensus that two concepts are inherently linked. This is exemplified in the observation made by Dodman et. al (2009:152) that

“...vulnerability, adaptation, and resilience are all deceptively simple concepts with widely varying meanings. Vulnerability is the basic condition that makes adaptation and resilience necessary.” A third argument is centred around how resilience and vulnerability researchers share themes, problems and “...rely on many similar methodological elements,” although along with these there remains a difference in motivation, terminology as well as in emphases/biases in data collection and interpretation (Miller et. al. 2010: 7).

### 3.1.5 Resilience, Adaptation and Disaster Risk Reduction

After having briefly looked at the relationship between resilience and vulnerability, this section will extend the discussion to briefly look at the relationship between the allied concepts of resilience, climate change adaptation and disaster risk reduction- all carry their own assumptions on dealing with climate change and disturbances.

Adaptation to climate change has been defined in a number of ways but one succinct definition that seems to capture numerous strands of these definitions considers adaptation to be “An adjustment in natural or human systems in response to actual or expected climate stimuli or their effects, which moderates harm or exploits benefit opportunities,” (IPCC 2007:6). The ‘first generation’ approach (also known as the ‘standard approach’) to conceptualising climate change adaptation was defined by its strong emphasis on “the selection and application of climate scenarios. By relying on climate change scenarios, the standard approach directs attention to the impacts of future climate change and by default, away from current impacts and vulnerability,” (Burton et. al. 2002:151). An understanding of the limitations of this approach is leading to a second generation of approaches that move away from a study of impacts to a study of the structure and nature of vulnerability (ibid). These focus on the present and advocate for changes in current policy (ibid). Different discourses on adaptation and its different understandings have led to a spectrum of adaptation where approaches can broadly be clubbed into four clusters (McGray et. al. 2007, Mitchell and Tanner 2006). The first set of approaches aim to address the drivers of vulnerability (McGray et. al. 2007:2). The second set chooses to focus on building response capacity and on “building robust systems for problem solving,” (ibid:2). The third set actively integrates climate information into planning processes to “reduce negative effects on resources and livelihoods,” (ibid: 2), and the fourth set focuses strongly on the impacts of a

changing climate and attempts to typically tackle risks that are “outside historic climate variability and with little bearing on risks that stem from anything other than anthropogenic climate change,” (ibid:2).

Disaster risk reduction (DRR) is understood to be: “The broad development and application of policies, strategies and practices to minimise vulnerabilities and disaster risks throughout society, through prevention, mitigation and preparedness,” (Twigg 2004). Through its focus on “...social, political, environmental and economic environments in which a hazard is situated,” DRR is in sharp contrast to an earlier understanding of disasters that considered them to be unavoidable ‘natural events’ (Mercer 2010:249). It traces its roots back to the field of humanitarian assistance and is centrally concerned with dealing with present risks through vulnerability reduction (Mitchell and van Aalst 2008). DRR engages with the ways in which communities are vulnerable to disasters as well as how vulnerability is exacerbated by particular development pathways chosen by communities and the degree to which “...community capacity can be strengthened to better deal with existing and future risk,” (UNDG 2009:3). Therefore, embedded within DRR are the twin concepts of disaster preparedness and disaster mitigation. The former refers to actions that lead a society to forecast, take precaution, respond and cope with disasters (LaTrobe and Davis 2005). Disaster mitigation on the other hand, is “... the measures that can be undertaken to minimise the destructive and disruptive effects of hazards,” (ibid: 16).

There are numerous points of difference as well as convergence between DRR and adaptation (refer to Mitchell and van Aalst 2008 for an overview), but it is their interaction with ‘resilience’ that is of interest to this research. Resilience and adaptation have different epistemological roots, in the field of environmental systems the former has been explored by ecologists and the latter has largely been the remit of anthropologists (Jansenn and Ostrom 2006). The resilience approach “...emphasises non-linear dynamics, thresholds, uncertainty, and surprise,” (ibid:238). Adaptation, on the other hand focuses either on mitigating expected damage from climate scenarios or on “...risks that are already problematic,” (ibid). This has led some theorists to analyse the elements that a resilience lens can bring to thinking on adaptation; for instance, resilience brings an understanding of how a system can be organised around multiple stable states as opposed to one equilibrium point and this greatly expands the

array of adaptation actions that may be undertaken (Nelson et. al. 2007). Also, at its core adaptation is rooted in engaging with specific risks whereas resilience with its emphasis on non-linear dynamics brings a thrust on readiness for uncertainty and surprise (ibid: 405). Therefore,

...whereas much of the adaptation literature is focused on reducing vulnerabilities of specific groups to identified risks, a resilience approach is concerned with developing sources of resilience in order to create robustness to uncertainty and to maintain the flexibility necessary to respond to change (ibid:412).

There has been comparatively less commentary on the DRR- resilience relationship in academic literature but certain interesting points of intersection do exist. Manyena (2006: 438) argues that resilience carries connotations of a swift recovery from any kind of disturbance, thus a resilient individual is "...irrepressible, buoyant, enduring, flexible; the person who bounces back." In contrast, the existing discourse on managing risk from disasters is predicated on a focus to minimise loss of life and livelihoods to return to a state considered to be 'normal' (ibid). DRR then describes a set of strategies to reduce vulnerability to create a human coping environment. "Yet we have learnt that people want more than simply to attain the minimum standards associated with coping, meaning that there is a need to adopt resilience thinking that goes beyond vulnerability reduction," (ibid: 446). Closely related to this issue of DRR carrying connotations of 'minimal change' is its engagement with short time horizons (Lankao and Qin 2011). Mitchell and van Aalst (2008) argue that DRR is centrally concerned with 'present risks'; similarly, Thomalla et. al. (2006) allege that DRR adopts time-horizons that are hinged on the 'short term' and on local scales of governance. Extending this argument is UNEP (2010) that understands DRR to be about 'short term coping capacities' and Mercer (2010) who argues that DRR adopts a historical perspective and is geared towards "addressing existing risks" (ibid:251). This is in sharp contrast to the 'future orientation' implicit within resilience thinking through its sophisticated assumptions on non-linear system dynamics that lead to uncertainty that needs to be managed through engaging with concepts of redundancy, flexibility and continual learning (Folke 2006, Norris et. al. 2008, Gunderson and Holling 2001; Wilby and Desai, 2010; Moser 2008; O'Brien and O'Keefe 2010). Importantly, Dodman et. al. (2013) arguing in the context of urban areas do not consider DRR and resilience to mutually exclusive. They note

that mainstreaming DRR into development policies and urban planning can help build resilience (ibid).

Therefore, adaptation and DRR have the potential to offer penetrating insights to those working to build resilience in urban areas. First, unlike resilience -- that does not enjoy a long track record of being employed in urban contexts (see section 2.4 for a more detailed discussion on this) -- there are a number of examples of adaptation interventions being implemented in cities. For instance, organizations such as the UNDP, the World Bank as well as various large European Governments have all undertaken adaptation projects in cities. Similarly, bodies such as the UN International Strategy for Disaster Reduction have undertaken extensive research and testing of methods to make urban areas safer from a range of disasters including those that are climate induced. Secondly, unlike resilience, which has been developed in a predominantly northern context (see section 2.4 for a more detailed discussion on this), both adaptation and disaster risk reduction find greater resonance within the policy contexts of developing countries. For instance, through UNFCCC's National Adaptation Programme of Action, a large number of least developed countries have climate change adaptation strategies in place. Similarly, through large multilateral agreements such as the Hyogo Framework for Action, 168 countries signed up to implementing disaster risk reduction plans.

Therefore, there are clear complementarities between these approaches to deal with climate change impacts.

### 3.1.6 Resilience and Complex Systems

Resilience thinking is wedded to the conceptual paradigm of 'complexity' and 'systems thinking'.

#### *3.1.6a What is 'Complexity' and Systems Thinking?*

Ramalingam et. al. (2008), in their paper on complex systems underlines a number of essential features/characteristics of 'complexity science'; here is a quick overview of those that are of most relevance to this research. First, this way of viewing the world is hinged on an acknowledgement that systems comprise of "interconnected and interdependent elements" (ibid:8). Second, change in a system is shaped by feedback processes or the continual, back and forth impact of system elements on each other

(ibid). Third, patterns and properties of a system are determined by the dynamic and multifaceted interaction of its various parts; these are difficult to predict or fully analyse (ibid). Fourth, change within systems is dynamic, non-linear and unpredictable (ibid). This is in stark contrast to traditional scientific approaches that assume “that linear relationships can be identified through data gathering and analysis,” (ibid). Fifth, small differences in the initial state of a system can result in major differences at a later stage due to the non-linearity of relationships (ibid: 27). Sixth, even though changes within complex systems may appear to be random there is an underlying pattern to the way in which “systems move through continually new states” (ibid:42). Seventh, complex systems are inhabited by adaptive agents that “...perceive the system around them and act on these perceptions, this means that their view of the world dynamically influences, and is influenced by, events and changes within the system,” (ibid: 44). Eighth, complex systems are characterised by ‘self-organisation’; similar to point number three, this is when “macro-scale patterns of behaviour occur as the result of the interactions of individuals who act according to their own goals and aims,” (ibid: 49). Last, organisms/agents within complex systems that interact closely with each other (e.g.- predator-prey) go through the process of co-evolution, this is when “...the evolution of one domain or entity is partially dependent on the evolution of other related domains or entities,” (Kauffman 1995 in ibid: 54).

As is evident, many of the characteristics of complex system and complexity science described by Ramalingam et. al. (2008) resonate with the core tenets of systems thinking. Systems thinking is also an alternative to traditional forms of analysis that seek to optimise the understanding of an issue by analysing its constituent parts. A systems perspective,

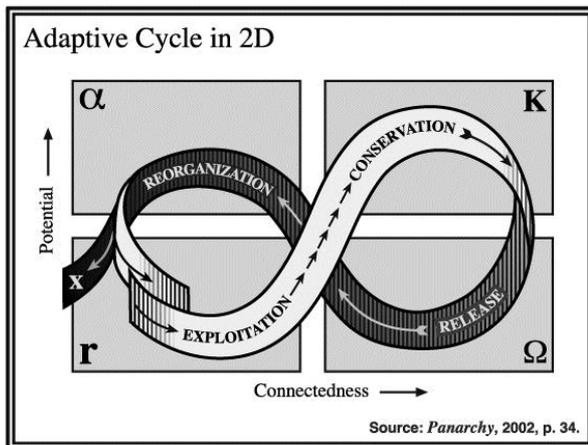
Focuses on how the issue being studied interacts with other constituents of the system...this means that instead of isolating smaller and smaller parts of the system being studied, systems thinking works by expanding its view to take into larger and larger number of interactions as an issue being studied, (Aronson 1996:1).

While highlighting a high degree of similarity, Ramalingam et. al. (2008), point out that there are some differences too. These include the fact that systems thinking does not pay adequate attention to self-organisation, it is hinged on certain notions of ‘rationality’

and that system change can be directed through ‘rule based learning’ (ibid). There are other differences too but these remain beyond the purview of this research.

### 3.1.6b How Does Resilience Thinking Relate to Systems Thinking and Complexity?

Walker et. al. (2006: 31) in their book on resilience thinking note, “Resilience thinking is systems thinking.” There are a number of ways in which the tenets of resilience thinking integrate with the principles embodied in complexity science and systems thinking.

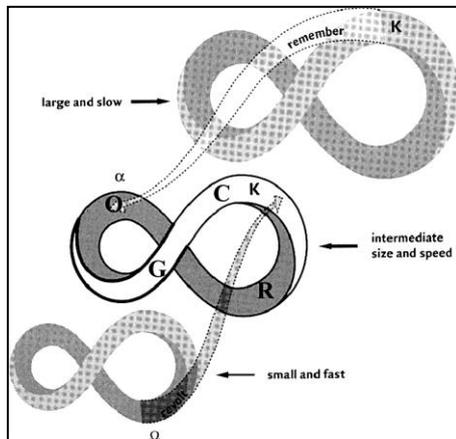


**Figure 6**The Adaptive Cycle (Resilience Alliance 2002)

First, central to ‘resilience’ is the heuristic of the adaptive cycle and of Panarchy. Essentially, the adaptive cycle is a heuristic device to understand how change takes place in complex systems and has four key phases. All complex systems, for example, the car industry in a particular country, first begins with ‘growth’ where a number of individuals rush into a new business opportunity to supply a new mode of transportation (Resilience Alliance 2002). Second, over time, the complex system enters the ‘conservation’ phase where a number of car companies have well-established businesses and a flourishing trade (ibid). Third, as the car companies and their practices start becoming more entrenched, they begin to lose touch with the environment around them (e.g. the changing needs of consumers) and there is a crisis, collapse or ‘release’ (ibid). Last, after the collapse, elements of the system, in this case, car companies enter a phase of ‘renewal’ where they reorganise, perhaps through mergers with other companies or the supply of cheaper, more efficient models that are the need of the day; alternatively, reorganisation is unsuccessful and the system transforms into a dysfunctional one (ibid). A large amount of empirical data records such phenomenon in complex systems ranging from forests and lakes to political and economic regimes across the world.

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Closely associated with the adaptive cycle is the concept of ‘Panarchy’ that says that such cycles of ‘creative destruction’ (growth-conservation-collapse-renewal) happen at different scales within a system (e.g. from particular companies to the industry as a



**Figure 7 Panarchy (Resilience Alliance 2002)**

whole) and at different time scales (as all elements of a complex system do not have synchronised cycles of change) (Gunderson and Holling 2001).

A resilience perspective argues that these cycles of change are inevitable and that measures should be put in place that allows the system to renew/reorganise most efficiently in order to maintain its function. It is important to bear in

mind that “...because of cross-scale interactions, the resilience of a system at a particular focal

scale will depend on the influences from states and dynamics at scales above and below,” (Walker et. al. 2004:9). Therefore, these elements of resilience thinking resonate strongly with systems thinking and complexity science (as described in section 3.1.2) as they acknowledge a high amount of interconnection and interdependence among system components. They also understand that there are feedbacks in change processes through a system, and that systems have an underlying pattern in the way they constantly move through new states.

Second, another way in which in resilience thinking embodies the key tenets of the complexity science and systems thinking is through actively employing the notion of the ‘socio-ecological system’ (SES). Even though resilience thinking is born from the natural sciences, in the context of engaging with climate impacts (and this research) it has come to operate within the paradigm of the SES (Folke 2006). Experts employ the socio-ecological system “...to emphasize the integrated concept of humans -- in nature and to stress that the delineation between social and ecological systems is artificial and arbitrary,” (ibid: 262). The SES embodies a complex view of the world as it argues that you cannot separate a system into its constituent, human/ social or biophysical/ ecological parts. Just as complexity science argues for adopting a prism of analysis that is hinged on acknowledging that systems comprise of “interconnected and interdependent elements” (Ramalingam et. al. 2008: 8); the socio-ecological system

underlines that the human and the ecological must be seen as highly interrelated. Walker and Salt (2006: 33-34) argue that this aspect of resilience thinking places it firmly within the sphere of systems thinking and complexity science, they note,

Resilience thinking is all about seeing the system-the social-ecological system that we're all part of- as one interlinked system...take a good look at the systems of which we are all a part and it soon becomes apparent that the biophysical system constrains and shapes people and their communities, just as people shape the bio-physical system.

Third, within resilience itself are embedded certain assumptions on governance and management: the most important of which is the notion of 'adaptive governance/management' (Swanson and Bhadwal 2007). This mode of management is not comprised of a series of rigid decisions but more as a process of "...experiments, with the aim of promoting continual learning and adaptation in response to experience over time," (ibid: 2). Borrowing from complexity science and systems thinking, adaptive management acknowledges that in a system there is a high degree of dynamism, multifaceted feedback processes, non-linear interaction between components as well as agents who deploy their own perceptions to impact system functioning (Ramalingam et. al. 2008; Swanson and Bhadwal 2007). Therefore, it propagates a system of management that includes continuous learning to help deal with emerging issues; encouraging self-organization by "reducing barriers to collaboration and learning,"(Swanson and Bhadwal: 3); working towards "subsidiarity" or decentralised decision making; and promoting variation as "Diversity facilitates the ability to persist in the face of change, and spreading risk is part of managing complex systems,"(ibid). Underdal (2010: 391) also examines the congruence of adaptive governance with complexity science and systems thinking to find that notions of decentralisation and decentralised decision making embedded within it, provide for each system component...

...the freedom required to act quickly. For the system at large, it can provide the flexibility required to adapt responses to local circumstances, and to test alternative options, thereby increasing the probability that at least some measure(s) will work.

### 3.1.7 Urban Resilience

As this research is located in the urban context, this section analyses the concept of ‘urban resilience’. Understandings on what constitutes resilience to climate change in urban areas are currently at a nascent stage of development. Yet, a small number of researchers are trying to answer questions such as ‘what is urban climate change resilience?’, ‘why is it important?’, and, ‘how is it built/achieved?’.

Leichenko (2011:164) argues that, “...urban resilience generally refers to the ability of a city or urban system to withstand a wide array of shocks and stresses,” and goes on to define resilience in urban areas “as the ability of a city or urban system to absorb disturbance while retaining identity, structure and key processes” (ibid: 164). Godschalk (2003: 137) echoes this point of view when he too points out that resilient cities are cities that are capable of withstanding shocks and stresses without “immediate chaos” or “permanent harm” and while hazards might make these cities “bend”, they will not break from shock or stress. Alberti et. al. (2004) extend this understanding of urban resilience to note the manner in which the resilience of urban areas is a function of human activities as well as natural factors and building resilience requires the maintenance of an optimal balance between human services (e.g. housing, transportation etc.) as well as ecosystem services. Chelleri et. al. (2012) also underline the importance of acknowledging the human and natural factors when they note that resilience entails the integration of “...of ecosystem functions within the social dynamics,” (ibid: 290). Leichenko (2011) echoes a similar sentiment when he draws attention to the manner in which climate change is just one of many stresses towards which cities need to be resilient. Arguing in the context of resilience in ‘metropolitan areas’, Swantsrom (2008), approaches this from a slightly different point of view when he notes that resilience, is a function of ‘internal relations’ within these areas, as well as external forces (e.g. globalisation and climate change).

Along with understanding and defining resilience these theorists have put forth notions of how urban resilience can be achieved. Foster (2007), in analysing the factors that can help build urban resilience, argues that relationships of urban governments with provincial and national governments can be an important determinant of resilience; he also adds that effective ‘leadership’ to help ensure that these Governments work well with each other can be critically important to the resilience building process in urban

areas. Closely associated with this is a finding of a review commissioned by the European Union (2011) that points out the manner in which resilience in urban areas is contingent on the degree to which urban governments are integrated vertically with other regional and federal governments as well as the degree to which its own departments work in collaboration with one another. Extending this argument, Leichenko (2011) says that in order to support resilience urban governments need to have attributes such as "...polycentricity, transparency and accountability, flexibility, and inclusiveness," (ibid: 46). Moving away from governance, other features that contribute to the resilience of urban areas include community engagement in plans and policies to deal with climate change (Dodman 2008, Godschalk 2003); iterative and decentralised decision-making and policy processes (Godschalk 2003); redundancy and spatial diversity in the supply of urban services as "...because each element can substitute another in case of need so that the whole system survives," (Chelleri et. al. 2012: 297); and diversified economic activities (Foster 2007). This list would be incomplete without a mention of Leichenko's (2011) observation on urban innovation and resilience, he says,

Cities are sites of social, political, economic and technical innovation. This innovation potential can be drawn upon to develop and implement strategies that promote resilience (ibid: 166).

After having looked at various definitions of urban resilience as well as an indicative list of factors that contribute to it, it would be useful to understand the reasons that justify programmes aimed at building resilience in urban areas. First, many cities, especially in low to middle-income countries, are located in areas such as coasts and along rivers that have a high exposure to climate impacts that add to their inherent vulnerability (Dodman 2008, Gasper et. al. 2011). Dodman and Satterthwaite (2008) argue that vulnerability to climate change in the urban areas of these countries has increased due to the scale and extent of poverty as well as the exposure of the urban poor to disasters. Second, processes of urbanisation themselves exacerbate the risks and exposure of cities to climate change. Commenting on this Godschalk et. al. (2003: 136) note "...the very features that make cities feasible and desirable—their architectural structures, population concentrations, places of assembly, and interconnected infrastructure systems—also put them at high risk to floods, earthquakes, hurricanes." Similarly, urbanisation is seen to degrade natural habitats, homogenise species

composition and disrupt hydrological systems (Alberti et. al. 2004). Third, due to dense settlement patterns, climate change can lead to cascading problems and exacerbate health problems within cities (Gasper et. al. 2011). Stressors related to climate change have both immediate and lasting impact on the physical and psychological health of urban residents. Essentially, in cities a larger number of people are exposed to hazards in a limited geographical space (Dodman et. al. 2013). Fourth, cities are where the battles against climate change will be increasingly fought. For instance, a review of damage from natural disasters in 2001 indicates that urban areas accounted for most of USD 36 billion in losses and 25000 deaths that year (Godschalk 2003). Also, in 2008, the world's urban population surpassed the rural population; the number of cities with over a million people grew from 11 in 1900 to 378 in 2000; this number is likely to rise to 599 by 2025) (Dodman et. al. 2013, Ruth and Baklanov 2012). Finally, cities are critically important to countries and “successful national economies depend on well-functioning and resilient urban centres<sup>6</sup>,” (Dodman et. al. 2009: 160). Underlining the critical importance of urban areas to the broader discussion on climate change Mukhopadhyay and Revi (2012:303) note “...on an urbanizing planet the struggle against climate change will therefore largely be lost or won in the cities.”

### 3.1.8 Transformation

Before moving onto the analytical framework (section 3.2) it would be important to understand the interplay between resilience and burgeoning idea of ‘transformation’. Transformation is conceptually nascent but drawing on insights from it provides potentially valuable opportunities for those designing resilience initiatives.

A small number of academics have started to consider the relationship between resilience and transformation. Pelling and Navarette (2011) argue that resilience initiatives working in the context of socio-ecological systems aim for ‘status quo’, and in this way may not always yield results that are ‘transformational’. Dodman et. al. (2013) echo this sentiment when they argue that certain interpretations of resilience argue for ‘bouncing back’ (possibly to a previous vulnerable state) whereas the emphasis should be on ‘bouncing forward’. Explaining this better in a different work, Pelling (2011:50) charges resilience

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<sup>6</sup> Ruth and Baklanov (2012: 2) add, “The fact that now more than half of the people on this planet live in cities not only means a high concentration of people and economic activity in select places, it also implies a fundamental restructuring of the relations between cities and their hinterlands as well as among cities regionally and globally.”

with seeking change "... that can allow existing functions and practices to persist and in this way not questioning the underlying assumptions or power asymmetries in society." Transformation, on the other hand, is seen as "the deepest form of adaptation indicated by reform in overarching political-economy regimes and associated cultural discourses" (ibid). This idea of transformation being akin to deep, fundamental and substantial change and resilience being inherently "incremental" finds resonance elsewhere too. For example, Walker et. al. (2004) note:

There is a major distinction between resilience and adaptability, on the one hand, and transformability on the other. Resilience and adaptability have to do with the dynamics of a particular system, or a closely related set of systems.

Transformability refers to fundamentally altering the nature of a system (ibid:4).

O'Brien (2011), while acknowledging the relatively limited potential of resilience in its current form, also argues that the paradigm of adaptation is aimed at "...accommodating change, rather than contesting it" and that, within this, "current systems and paradigms are accepted and in some cases modified, but rarely critically questioned or challenged" (ibid:3). In contrast, she understands transformation as a process leading to "...physical and/or qualitative changes in form, structure or meaning-making" and examines transformational changes as those that alter "...entrenched systems maintained and protected by powerful interests" (ibid:4,5). Similarly, Francis et. al. (2003), speaking in the context of organisational change, argue that the idea of substantive change is embedded in the notion of transformation, noting:

...it is almost inconceivable that a firm can achieve a radical transformation through the building up of "normal" or incremental capabilities... Instead, it may be necessary to destroy, at least in part, the existing approach to business as well as the capabilities that underpin this to enable transformation to occur (ibid:19).

Therefore, it seems that transformation provides an effective set of principles with which to rectify the charge of "incrementality" levelled at resilience thinking (Leach 2008, Cannon and Muller-Mahn 2010) (see section 3.1.3 for more detail on this). The paragraph above also demonstrates that even though many of these theorists approach the notion of transformation from varied epistemological perspectives, they all seem to recognise the potential value derived from integrating its principles in processes of change. Along with carrying assumptions of 'substantive change' the notion of transformation seems to be inherently linked to the idea of 'empowerment'. As such, an engagement with power and politics (a recognised weakness of resilience thinking, see section 3.1.3) lies at its very

heart. This is seen in a number of ways: first, a substantial contribution to the conceptual and practical exploration of the idea of transformation in development comes from those engaged in work around social protection. Devereux and Wheeler (2004) in ‘Transformative Social Protection’ note that theory and praxis of social protection can only reach its full potential and become transformative if it moves beyond its current focus on “targeted income and consumption” transfers to also acknowledge the importance of “equity” and “rights” in protecting the lives and livelihoods of the marginalised. The authors, in this paper, equate transformation with, “The need to pursue policies that relate to power imbalances in society that encourage, create and sustain vulnerabilities” (ibid: 9). Second, another group that has looked at transformation in the context of development are those working in the field of education. Transformative Education aims to extend the ability to “critically reflect” on their world to students in “disempowering contexts” – for education to be “transformative”, it must focus on helping students in such contexts to regain a “...sense of identity and self-determination” (Bivens et. al. 2009). Therefore, Transformative Education aims to “transform” by sensitising students to oppressive power structures (ibid). Third, Pelling (2011) extends these insights into managing risk from climate change. He observes that ‘conscientisation’ or critical awareness is important for a transformational approach to dealing with climate change by breaking away from certain malignant institutionalised positions, such as the

...dominant preference for maximizing personal economic wealth beyond aspirations for social or environmental aspects of well-being or sustainability...  
The result is a sense of lock-in with the institutionalized status quo generating feedback loops that support further entrenchment (ibid:10).

Pelling also argues that for Climate Risk Management to be transformative it must be a tool for “...opening dialogue and contributing to wider, inclusive forms of governance” (2011:10). The author makes a telling distinction between “transitional” and “transformational” adaptation, observing that the latter carries the potential for climate change adaptation to be a mechanism for shifting the balance of political and cultural power in society (ibid). Last, hailing from the domain of Future Studies, Kapoor (2007: 478) extends this argument and notes that “social transformation” entails engagements with issues of power at two levels; on one hand, it entails changes in the social structure and, on the other, changes in individual “...values, capabilities and choices.” Kapoor (ibid) also argues that alterations in consciousness such as this at the individual level are key to bringing about wider social transformation.

This discussion is not an argument for the discarding of ‘resilience’ and the promotion of ‘transformation’ but to explore the potential for ‘reframing resilience’ as a concept that includes useful tenets from transformation. On the face of it, it certainly seems that transformation is fundamentally linked to issues of power and politics. Therefore by drawing on transformation, resilience can perhaps become a more valuable tool to be deployed in the battle against climate change.

### 3.2 Analytical Framework: The Policy Process Context

A review of literature on policy processes reveals a high degree of diversity in understanding how policy change happens but also reveals points of convergence between these theories. Carefully distilling the essence of dominant theories has led to the formulation of a conceptual framework that argues that all policy change is a function of knowledge and discourse; actors and institutions; and policy making spaces.

#### 3.2.1 Knowledge and Discourse

Almost every dominant method of understanding policy change, discusses the role of knowledge in this process, very broadly these theories can be divided into groups. The first group carries a somewhat positivist and technical view of knowledge and is seen in functional terms.

The Linear Model of policy processes that is the classical, depoliticised approach to understanding policy change views the operation of knowledge in affecting change quite unproblematically. Here knowledge is given primacy but is seen in terms of “...understanding the policy issue or problem; exploring possible options for resolving the problem, weighing up the costs and benefits of each option; making a rational choice about the best option; implementing the policy; evaluation,” (Wolmer 2006:7). In a similar vein, Lindblom (1979) through his Incrementalist Approach also looks at the role of knowledge in processes for change but again, this is treated somewhat technically. Lindblom views policy change as a sum of stages where objectives are set and then options for achieving these are identified (Hogwood and Gunn 1984). Knowledge in this conceptualisation of policy change is limited to function as ‘stratagems’ for problem solving (Lindblom 1979). The Interactive Approach to understanding policy change which says that the outcomes of a policy are determined through the interaction of ‘policy elites’ with managers (the policy implementers) is

also underpinned by a primacy of knowledge to understanding processes of change (Grindle and Thomas 1991).

Sutton (1991) critiques this model of understanding knowledge and says that it incorrectly presumes that knowledge in the form of 'research' is used directly in the policy-making process without acknowledging the complex politics of the research-policy relationship. Simon's 'Satisficing' model of policy change which argues policy change to be a sum of four phases is hinged on the notion that policy makers should have 'perfect knowledge' while making decisions (Hogwood and Gunn 1984). Simon sees policy change to begin with knowledge gathering-essentially equating knowledge with the less problematic notion of information (*ibid*). The Multiple Streams Approach propounded by Kingdon argues that that policy-making is a process composed of five main conceptual structures, i.e. three streams (problems, politics and policies), policy entrepreneurs and policy windows (Zahariadis 2007). Here knowledge is considered relevant but only as 'ideas' generated by specialists for problem solving.

A second generation of policy process models understand the role of knowledge in processes of change quite differently. These actively 'problemitise' the idea of knowledge by examining it as 'discourse, narratives and frames' inherently linking it to power. There remains a considerable amount of variety in the manner in which the notion of discourse is understood and discussed. At its very basic level, discourse can be seen as transparent statements and systems of language used for communication, but many theorists have looked beyond this to examine the beliefs, values and systems of representation that discourse embodies (Hall 1997, Mills 1997). "Different modes of discourse encode different representations of experience; and the source of these representations is the communicative context within which the discourse is embedded," (Hawthorn, 1992:48). This is similar to Foucault's conceptualisation of discourse: Hall (1997) argues that Foucault's views on discourse are difficult to distil into a neat definition but very broadly, it can be said that for Foucault the idea of 'discourse' resembled "...a group of statements which provide a language for talking about- a way for representing knowledge about- a particular topic at a particular historical moment," (*ibid*: 72). Structuralist and post-structuralist theorists (including Foucault) link discourses with systems of power, and argue that these are deployed by the powerful to 'obfuscate' inequities in power relations (Howarth 2005). Extending this theme of

discourses and power as inherently entwined, Mills (1997) argues that institutions and social contexts are responsible for the formulation and promulgation of discourses,

A ‘discourse’ as a particular area of language use may be identified by the institutions to which it relates and by the positions from which it comes and which marks out for the speaker. The position does not exist by itself, however. Indeed, it may be understood as a standpoint taken up by the discourse through its relation to another, ultimately an opposing discourse. (ibid: 10)

The notion that discourses fundamentally operate in opposition to other prevailing discourses is also explored by Howarth (2005). Taking interpretations of discourse firmly beyond the idea of statements and functional language, Howarth (ibid:9) argues that discourses are in essence “systems of social relations and practices” that are inherently political. He goes on to state that the establishment of discourses “...involves the construction of antagonisms and the drawing of political frontiers between insiders and outsiders,” (ibid: 9). Foucault (1977: 27) also elucidates the idea that discourses establish themselves by intrinsically opposing other discourses and writes “...‘there is no power relation without the correlative constitution of a field of knowledge, that does not presuppose and constitute at the same time, power relations.’” This opposition/conflict between discourses leads to the marginalisation of certain bodies of knowledge and the establishment of other dominant narratives, Foucault has extensively discussed the manner in which certain forms of knowledge are excluded from consideration as ‘true’, Mills (1997) explains,

Foucault argues for the imbrication of power with knowledge, so that all of the knowledge we have is the result or the effect of power struggles...what is studied in schools and universities is the result or the effect of power struggles over whose version of events is sanctioned. Knowledge is often the product of the subjugation of objects... (ibid: 19).

Therefore, in Foucault’s view, knowledge is always a form of power and is deployed to constrain, regulate and discipline practices (Hall 1997). Fairclough uses an example to underline a similar point (Mills 1997). He talks about how alternative knowledge about health is not given the same status as conventional medical science “...and a great deal of effort and discursive work is expended on ensuring that alternative medicine is considered inferior. Amateurish and as falling within the sphere of charlatans, thus maintaining for medical science the authority of the ‘true’ and the ‘scientific’” (ibid: 17) Therefore, there seems to be a convergence of opinion between theorists that discourses

are fundamentally about power relationships between various actors in a given social system.

Pecheux approaches the debate on power, knowledge and discourse from another perspective. He believed that meanings of words were related to larger structures and that words and sentences did not have a fixed meaning in themselves (ibid). He conducted an experiment where he gave students an economics text and told one group of students that the text reflected left-wing economic ideology and told another group of students that it was a right-wing text, the text itself was quite centrist and did not explicitly subscribe to either of these ideological poles (ibid). As a result of this the students interpreted the text in disparate ways to fit in with the framing that he had provided (ibid). Through this experiment, Pecheux underlined that utterances and statements were imbued with meaning and substance by powerful forces (institutions/actors) and that this act of 'framing' was itself a technology of control and an exertion of power. This is in line with Foucault's views on discourse as he focussed on the confluence of knowledge and power and was centrally concerned with how power operates in particular institutional apparatuses and is exercised through particular technologies (Hall 1997). Foucault has been critical to understanding how 'meaning' is generated and attributed by the powerful through discourse for particular ends and therefore "...it is discourse not the things themselves-which produces knowledge. Subjects like madness, punishment and sexuality only exist meaningfully within the discourses about them," (ibid: 73). This has led theorists to argue that the task of 'discourse analysis' is to then expose the way in which language and meaning are used by the powerful to deceive, oppress and dominate (Howarth 2005).

These understandings of how power, knowledge and discourse interact are embodied in a range of approaches to conceptualising policy processes. Unlike some of the more rational models of policy making that treat knowledge as a functional component of policy making, the Policy Discourse and Policy Narrative Model looks at the complex integration of knowledge and power to argue that policy change results through the construction of 'discourses and narratives' (Brock et. al. 2001). Central to the idea of 'discourse' in policy processes is the notion of 'framing' that addresses the ways in which seemingly value neutral issues are purposefully but implicitly projected in a particular way within policy processes to achieve particular ends (Brock et. al. 2001).

The Research and Policy in Development (RAPID) project at the Overseas Development Institute has studied how research is appropriated in processes of policy change and while they largely think of knowledge as evidence that needs to be presented to policy makers they are also mindful about the need for this knowledge to be ‘framed’ appropriately (Crewe and Young 2002). The Knowledge, Technology and Society research team (KNOTS) at the Institute of Development Studies, UK has also developed a model of understanding policy change that sees this to result from the interaction of three overlapping domains of influences—discourses, politics and actors (this model is a strong influence on the conceptual framework for this research project.) The KNOTS approach lays strong emphasis on the nature of knowledge and the processes through which it is appropriated in the policy processes, “...knowledge for policy...is produced discursively. This means it both reflects and shapes particular institutional and political practices and ways of describing the world. Discourses frame the way in which problems are thought about, linking up different issues, often in highly programmatic, narrative cause and effect form,” (Keeley and Scoones 2003). Therefore, it is now widely acknowledged that discourses are a critical element of any context in which policy processes unfold.

### 3.2.2 Actors and Networks

The importance of ‘networks’ to policy change has been noted by a range of theorists. For instance, John (1998) argues that sets of individuals with similar beliefs within policy making systems can be perceived to be a ‘network’ and the primary driver of change in a policy process are “interactions between participants in the policy process,” (ibid: 46). Keeley and Scoones (1999) contend that the act of establishing networks is, in fact, an act of establishing knowledge and therefore, Actor Network Theory (ANT) can be a useful instrument to understand how knowledge is framed and deployed in the policy process. This wide-ranging theory has seen a high degree of variation in its interpretation from different theorists (Ritzer 2004); it includes a number of interesting insights but of most interest to analysts of the policy process is its understanding of how actors (or ‘actants’ as they are known in ANT) “...enter into networked associations, which in turn define them, name them, and provide them with substance, action, intention...” (ibid: 1). Law (1992) also mirrors this point to argue that agents never exist in themselves but draw their agency or volition from networks; acts performed by actors are given meaning ‘in’ and ‘by’ the networks to which they belong. Latour

(1996:11) supports this point by stating that “Every network surrounds itself with its own frame of reference, its own definition of growth, of referring, of framing, of explaining.” Other theorists too echo this understanding to demonstrate the manner in which ‘agency’ is derived not from some isolated/individual capacity but is interactive and is consolidated through webs/networks of mutually reinforcing relations (Dolwick 2009). Keeley and Scoones (1999:20), employ this insight from ANT to better understand the policy process, they argue “...scientific facts are only as strong as the networks that uphold them. If key individuals or institutions withdraw their support from the network, then the power of the facts weakens.” Theories and evidence to be used in the policy process are created, become powerful or gain supremacy through a collective process (Keeley and Scoones 2003); they are then transmitted and deployed through networks of actors-“Those wanting to build arguments must, therefore, involve others in their project...” (ibid:34).

Another concept of relevance to this research associated with the notion of Actor Networks is the idea of the ‘Epistemic Community’,

An epistemic community is a network of professionals with recognised expertise and competence in a particular domain and an authoritative claim to policy-relevant knowledge within that domain or issue area (Haas 1992: 3).

According to Haas (ibid), these communities have four essential characteristics. First, they have a shared set of beliefs and a value-laden view of the world (ibid). Second, they have a shared view on particular cause and effect relationships that in turn elucidate “...multiples linkages between possible policy actions and desired outcomes,” (ibid: 3). Third, they have shared notions of validity (i.e. “internally defined criteria for weighting and validating knowledge) (ibid:3). Fourth, they have a common ‘policy enterprise’ or a common set of practices striving towards shared goals (ibid: 3). The integrity of these communities is premised not only on their shared beliefs but equally on their ‘shared aversion’ to policy problems that are outside the framework of their ‘policy enterprise’ or policy agendas that stem from other epistemic stand points (ibid). In attempting to understand the mechanisms through which epistemic communities gain influence, Kelly (2012) notes how they exist ‘outside’ the Government and “their outsider status permits them to be enmeshed in processes of change,” (ibid: 14). He goes onto talk about how their authority also results from their recognised ‘expertise and competence’ (ibid). Keeley and Scoones (1999) also underline the importance of

epistemic communities to policy processes and investigate their influence to argue that this results from ‘uncertainty’ that policy makers face when engaging with complex policy issues. As for the roles that they perform, not only do epistemic communities produce, disseminate, and control knowledge, they also have a hand in ascertaining those who will in turn be considered to be ‘knowledge shapers’ (Meyer and Hodgson 2010). They are dynamic entities and present versions of the past and future possibilities (ibid). They influence policy by ‘framing issues’, promoting new ideas/innovations, defining solutions to policy problems and keeping particular ideas on the policy making agenda (Zito 2001).

Moving on from a discussion on networks and communities, it would be important to also understand, the role of ‘knowledge intermediaries’ in the policy process that has received surprisingly little attention in academic literature (Vogel et. al. 2007). This said, there are a few helpful analyses that aim to better understand the role and functioning of this critically important group of policy actors. Knowledge intermediaries are defined as the “...actors who are involved in processes of generating, interpreting, organising or communicating information for a particular purpose,” (Woolfe 2006). Importantly, the term is not only applied for individuals but also to organisations and networks (Vogel et. al. 2007). There has been a gradual shift in the way that the role of these intermediaries has been conceptualised and this is intrinsically linked to the manner in which knowledge has been understood. For instance, in a paradigm where knowledge is delinked from structures of power, intermediaries are thought to only convey knowledge and their values/beliefs are not seen to be a part of the process (Woolfe 2006). When a more complex view of knowledge is adopted, then it becomes difficult to consider intermediaries as inert and it becomes necessary to acknowledge how their “...judgments shape the information environment, while their own understandings and political framings influence how they interpret, present and position information,” (Vogel et. al. 2007: 6). A number of theorists have attempted to understand the numerous roles that these intermediaries play in the policy process; Sin (2008) highlights the functions of knowledge intermediaries. First, they are ‘cross pollinators’ - that is, they are in touch with a variety of development actors and spot and exploit opportunities to share information among these (ibid). Second, they are ‘translators and processors’ who interpret and adapt information prior to its presentation (ibid). Third, they not only convey knowledge to end-users but also help articulate the

needs of users to those engaged in knowledge production (ibid). Similarly, Woolfe (2006) argues that intermediaries are inherently political and therefore can also be advocates for particular agendas; they can be more than just conveyors of information and can facilitate and shape dialogue (ibid); they can also abet process of mutual learning through “through a process of dialogue, reflection, understanding and practice to co-construct knowledge,”(ibid:14). Intermediaries play a crucial role in the policy process by bringing new knowledge to it but as the insertion of alternate perspectives can lead to conflict, they also help in mediation and managing trade-offs (Jones 2009: 27).

No discussion on actors critical to the policy process can be complete without a look at the ‘policy entrepreneur’. These are individuals who bring ideas and issues to the policy environment, they also highlight and push for one kind of problem definition over another (Roberts and King 1991). Steen and Groenewegen (2008 :6) add another dimension to this understanding and define this group of policy actors as “Persons willing to use their own personal resources of expertise, persistence and skill to achieve certain policies that they favour.” A number of theorists have attempted to delineate the different functions that these entrepreneurs execute and these include generating ideas, framing and defining problems, disseminating information, developing strategies and tactics and cultivating those who would make change possible (e.g. bureaucrats) (Roberts and King 1991). Terming them ‘policy leaders’, Plowman et. al. (2007) work within the paradigm of a complex system to examine a few different roles that policy entrepreneurs can play. First, they disturb the status quo and change existing patterns of thought and behaviour (ibid). Second, they encourage novelty and give people the freedom and flexibility to try a number of different approaches to attain certain policy goals (ibid). Third, they do not hand down decisions but share information and help people connect to one another (ibid). Fourth, they indulge in sense-making, this is a process by “...which individuals construct meaningful explanations for situations and their experiences within those situations ,” (ibid:351). Long (1990) adds to this by listing characteristics of policy leaders to note that they are usually embedded in the policy context, they never make decisions alone but consult with a variety of stakeholders, they have and present a vision of change and they possess cogent ‘practical skills’. Zahariadis (2007) views policy making as a process composed mainly of 3 streams (problems, politics and policies) but this model is hinged on the importance of

‘policy entrepreneurs’ (ibid). These are actors who help ‘couple’ the streams to take advantage of policy windows created by a variety of events. “These entrepreneurs need to ensure that as far as possible, problems, policies and politics are coupled in a single package to maximise a policy’s chance of being adopted,” (Zahariadis 2007: 34). Similar to ‘coupling’ is the ability of policy entrepreneurs to ‘punctuate the equilibrium’ ‘in policy processes and help achieve policy change by shifting the public understanding of problems and the balance of power (John 1998).

Apart from this, a number of theorists have also underlined other roles of policy actors. For instance, the ‘Satisficing’ approach to policy processes puts policy actors and decision-makers centrestage but argues against the tendency of earlier, ‘rational models’ to assume these actors to be perfectly sentient individuals (Grindle and Thomas 1991). It says that policy results not from optimal solutions to problems but from solutions that satisfy the basic criteria of a policy maker for acceptable alternatives (ibid). Similarly, Lindblom (1959) too accords critical importance to actors, arguing that it is consensus between policy actors that leads to certain policies gaining traction. Another well-known view of policy change argues that it is necessary to understand interests and agencies of those individuals and institutions that are charged with ‘carrying out’ a policy decision (Lipsky 1980, Parsons 1995). It states that policy change hinges on these actors or ‘street level bureaucrats’ and that effective policy making should “...start from an understanding of the working conditions and priorities of those who deliver policy,” (Lipsky 1980). RAPID’s conceptual model of policy change, three interlocking spheres of influence-the political context, links and evidence come together to deliver change (Crewe and Young 2002). One of these three pillars-link is centrally concerned with relationships between actors in a policy making context and argues that it is the dynamics of these fluid relationships that influences policy change (ibid).

### 3.2.3 Policy Spaces

The actors and discourses in the policy process discussed above come together in policy-making ‘spaces’. A large number of theorists have explored the dynamics and importance of spaces to policy processes and decision making. Foucault, sees these spaces as essential to any exercise of power (Cornwall 2008). Habermas through the exploration of the ‘public sphere,’ examines consensus building in processes of public

deliberation (ibid). Lefebvre, argues that spaces could be seen as ways in which opportunities for citizen engagement may be conceived or more concretely as “actual sites that are entered and animated by citizens,” (ibid: 2). Similarly Bourdieu (1962, 1977), Giddens (1979, 1990, 1991), Sen (1999) and Spivak (1999) have all explored the idea of ‘space’ in different ways. Many of these find resonance in Gaventa’s (2005) seminal exploration of policy spaces through the heuristic of the power cube. Here he sees spaces as “...opportunities, moments and channels where citizens can act to potentially affect policies, discourses, decisions and relationships which affect their lives and interests,” (ibid:11). Gaventa (ibid) proposes a typology of arenas in which decision-making takes place as a continuum with at least three distinct points.

First, there are ‘closed’ spaces. Here policy decisions are taken by a set of powerful actors behind closed doors, without the participation of citizens or those that the policy will affect (ibid). These spaces lack even pretence of inclusion and within these “...politicians, bureaucrats, experts, bosses, managers and leaders make decisions with little broad consultation or involvement,” (IDS 2011: 16). Gaventa (2006) extends this argument to explain that these closed spaces can also be thought of as ‘provided’ spaces where policy elites provide services to citizens without soliciting their views. The second type of space as per Gaventa’s conceptualisation is the ‘invited’ space. These are policy making spaces into which citizens/users/beneficiaries are invited to participate by governmental and non governmental agencies (Gaventa 2005). These could be permanent, institutionalised and on-going or they could be established to take particular decisions around individual policies (Gaventa 2006). Cornwall (2002) argues that within this type of space there are ‘regularised’ relations as they are controlled and bound by the inviting party and participation within these spaces is highly regulated. She says, “...their purposes, mandate and remit tend to be circumscribed by the agendas of implementing agencies and are rarely, if ever, open to negotiation by citizens who are invited to take part in them,” (ibid: 18). Therefore, even though the ordinary citizen is taking part in processes of governance within these spaces, she/he is doing so not on their own terms (ibid). As such, within these spaces the content of discussion is tightly regulated and the outcome is framed by the inviting parties in a way that is congruent with their agendas and interests (ibid). Gaventa (2005) explains that with the growing popularity of participatory governance such spaces have started to come up at many different levels from policies with relevance to only local governance to global policy forums. Even

though the capacity of these spaces to achieve transformational change is seen to be limited and some perceive participation within these as “tinkering on the margins of already decided solutions,” other have argued that they could induce new ways of looking at and discussing issues (Cornwall 2002: 19). Cornwall (ibid) also explains that, the fact of these spaces being convened by powerful actors already limits the type of participation that takes place, as, for example, “...in deliberative spaces where ‘experts’ are present even the most well-equipped, middle-class lay person may end up feeling cowed,” (ibid: 27). Apart from closed and invited spaces, Gaventa (2006:5) argues that the third type of spaces are those that are “... claimed by less powerful actors from or against the power holders, or created more autonomously by them.” Here ordinary citizens struggle to acquire a place on the decision making table through, for instance, social movements or establish democratic forums running parallel to formal, closed policy making processes. Cornwall (2002) argues that they draw sustenance from the very fact that those participating within them are excluded from other processes and their organic nature “... lends them flexibility and spontaneity, but makes them impossible to institutionalise,” (ibid: 22). Others have termed these ‘third spaces’ where the act of participation is an acknowledgement and rejection of other hegemonic policy spaces (Gaventa 2005).

An understanding of these spaces requires consideration of the types of power that operates within them. Each of these policy spaces can act as theatres for different dynamics of power that determines outcomes in decision/policy making processes. There is a long history of analysing power in policy process but this research will employ the schema proposed by Lukes (1974), Veneklasen and Miller (2007) and Gaventa (2005). This is because these subsume a large number of the important analyses of power within them, all three are intrinsically bound to each other and have a history of application in understanding the participation of actors in the policy processes (Gaventa 2005). While acceding primacy to the aforementioned frameworks, this section will also but also draw on the work of Hickey and Mohan (2004), Mosse (2001), Cleaver (1999, 2004), Kothari (2001). Lukes (1974) traces the development of how power in decision-making has been understood and proposes that there are essentially three categories. The one dimensional view of power includes the work of noted theorists of power such as Dahl, Polsby and Wolfinger (ibid). Here power is understood as observable conflict: in terms of who prevails over whom (ibid). Dahl (1968:3) for instance, conceived of power as “A has

power over B to the extent that he can get B to do something that B would not otherwise do,” and “a successful attempt by A to get B to do something he would not otherwise do.” This involves a study of formal, authorities, institutions, and procedures of decision making and could manifest itself through, for example, particular set of actors excluding another set in a policy process (Gaventa 2005; Veneklasen and Miller 2007). The two dimensional view of power, stems from an analysis of the critique for the one-dimensional view. This essentially claims that the one dimensional view “...unduly emphasises the importance of initiating, deciding, and vetoing’ and, as a result, takes ‘no account of the fact that power may be, and often is, exercised by confining the scope of decision-making to relatively ‘safe issues’,” (Lukes 1974:6).

Gaventa (2005) calls this hidden power and argues that it is understood in terms of who gets access to decision-making processes and decides what gets onto the agenda for discussion. Veneklasen and Miller (2007) further explain this and say, “Excluded groups often point out that they and their issues...are both invisible to the society at large and absent from the political agenda, (ibid: 47). Hickey and Mohan (2004) outline the manner in which it is the functioning of this form of power that afflicts many participatory spaces within development initiatives. Mosse (2001:20) too extends this point through his extensive ethnographies of development projects and observes that at times participatory techniques do not “...reveal an alternative to the official view of poverty...but served to further legitimize the official discourse.” Similarly Kothari (2001) too argues that many times a form hidden power allows powerful actors to control the nature of participation within policy making spaces to yield results that are in line with their priorities. Even though Lukes (1974) admits that the two-dimensional view is an advance to the first approach to studying power it still is too focussed on “...behaviorism - that is, to the study of overt, ‘actual behaviour’, of ‘concrete decisions’ in situations of conflict,” and that is why he proposed the three dimensional view (ibid:8). This is also known as ‘invisible power’ and starts to resemble Gramscian notions of hegemony as it “...shapes the psychological and ideological boundaries of participation. Significant problems and issues are not only kept from the decision making table, but also from the minds and consciousness of the different players involved...” (Gaventa 2005:15). A number of practioners have outlined that it is invisible power that at times renders participatory methods of gathering knowledge and making decisions within development ineffective. Mosse (2001: 19) contests the presence of an independent ‘local knowledge’

to be harnessed by participatory methodologies and argues that this always coloured by the intangible operation of invisible power, he says, "...local knowledge' reflects local power...these events <participatory techniques>can be seen as producing a rather peculiar type of knowledge, strongly shaped by local relations of power, authority and gender." Kothari (2001: 141) buttresses this argument when she says, that knowledge is "...an accumulation of social norms, rituals and practices that, far from being constructed in isolation from power relations is embedded in them."

The operation of these different kinds of power within varied policy-making spaces determines how diverse policy actors participate within policy processes -- in turn, defining the very nature these spaces themselves. There exist a number of different frameworks for analysing the manner which actors behave in policy spaces and participate in decision-making, this paragraph presents a synthesis of key schools of thought (Arnstein 1969, Tufte and Mefalupolos 2009, Cornwall 2002, White 1996, Mohan 2001). The most widely-cited and seminal typology of understanding participation in policy spaces is Arnstein's (1969) 'Ladder of Citizen Participation' that divides participation into three broad categories. The bottommost rung of Arnstein's ladder revolves around 'non participation', here she claims that the motive of the power holders is not to solicit people's participation and policy spaces are structured to allow a manipulation of the participatory processes so as to exclude a diversity of voices. Sometimes, non-participation can result not from wilful manipulation but oversight (that may in some cases be a function of inherited biases) on behalf of the inviting parties. For example, often scant consideration is accorded to the 'timing and duration' of the opening up of participatory spaces so that people who work or have others to look after are automatically excluded (Cornwall 2002); similarly, geographical spaces in which participatory exercises take place can deter people's involvement as they can be "...culturally associated with groups to which they do not belong or activities with which they are unfamiliar or uncomfortable," (ibid:279).

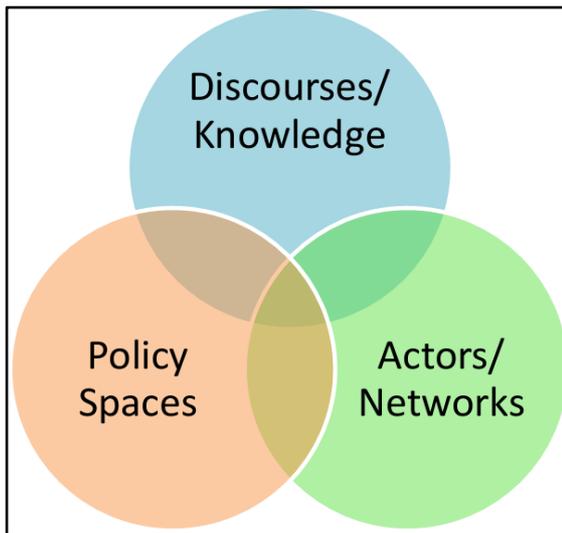
Second, tokenism is another form of participation that is entails a vision of participation that is more progressive than the first stage but remains deficient on many counts (Arnstein 1969). Here policy spaces are established to either inform citizens about the details of progress being made within the policy in question through a 'one-way' flow of information (ibid); as a stage for processes of consultation that solicit feedback but do not

guarantee that citizens' opinions will be integrated into policy processes (ibid); or to placate citizens by including a few in mainstream policy processes but structuring the process so as to minimise their influence (ibid). Cornwall (2002) extends the understanding of tokenism in policy spaces through a discussion on 'functional participation' where participation is sought to maximise the 'efficiency' of development projects. Others have termed this 'instrumental participation': here the main decisions have been made before the community members are asked to contribute their labour or time to help meet project objectives (White 1996); this kind of participation is also sought to enhance the 'sustainability' of development projects by increasing the ownership of the community towards them (ibid). Much of the participation that takes places in 'invited spaces' that were described in the preceding paragraph falls into this category of participation as these are "...structured and owned by those who provide them, no matter how participatory they may seek to be," (Cornwall 2008: 275). Functional participation stems from a will to enhance 'efficiency' within development initiatives rather than 'empower' those who enter these participatory spaces. Hickey and Mohan (2004: 4) note how participatory development has often "...failed to engage with issues of power and politics and has become a technical approach to development that, in various ways, depoliticizes what should be an explicitly political process." Mosse (2001: 17) too argues that this tokenism and functionality afflicts participatory spaces as those running development interventions are focussed on "...greater productivity at lower cost', efficient mechanisms for service delivery or reduced recurrent and maintenance costs."

The most progressive form of participation in policy spaces is what Arnstien (1969:11) calls 'citizen power'. Here citizens are partners in decision-making, they have the ability to substantially influence policy outcomes and in certain cases "...be in full charge of policy and managerial aspects," (ibid: 11). Sometimes also referred to as 'transformative participation' this is when policy spaces are platforms for non-hegemonic voices that are mobilised for achieving substantive change (Mohan 2001, White 1996). This form of participation also includes 'interactive participation' that is a learning process through which citizens slowly take control of policy spaces and decision making process and 'self mobilisation "...where people take the initiative independently of external organizations, developing contacts for resources and technical assistance, but retaining control over these resource," (Cornwall 2002: 271). This resonates very strongly with the idea of 'empowerment participation' where citizens maintain effective control on policy

processes. Hickey and Mohan (2004) while outlining the conditions for transformative participation note that this takes place when participatory methods are not used for narrow ‘efficiency gains’ but are a part of a wider political project, for instance, linked to securing citizenship rights for marginalised groups; and when the process of development is conceived of as a process of social change as opposed to discrete technocratic interventions.

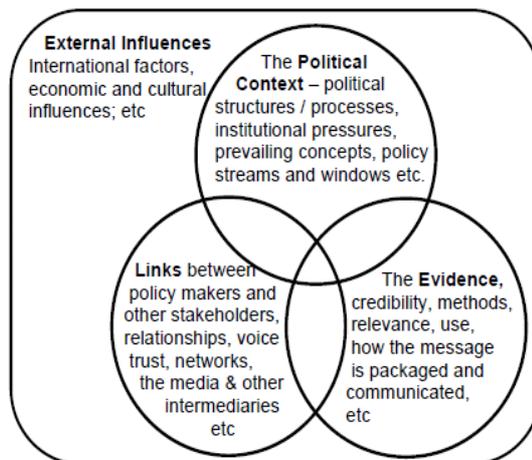
### 3.2.4 Combining Discourses, Actors and Spaces



**Figure 8 The analytical framework**

The three sections above have attempted to demonstrate the manner in which discourses, actors and spaces come together to determine the manner in which policy change happens and define the policy process. As such, it theoretically seeks to attribute equal weight to the three components; at the same time, implicit within this model is the assumption that the relative influence of each component would differ from one policy context to the next.

While, this approach to understanding policy processes is a synthesis that stems from a theoretical foundation laid by a large number of theorists (cited through the preceding three sections), there is a precedent for understanding policy processes in this way and a number of widely used models of policy

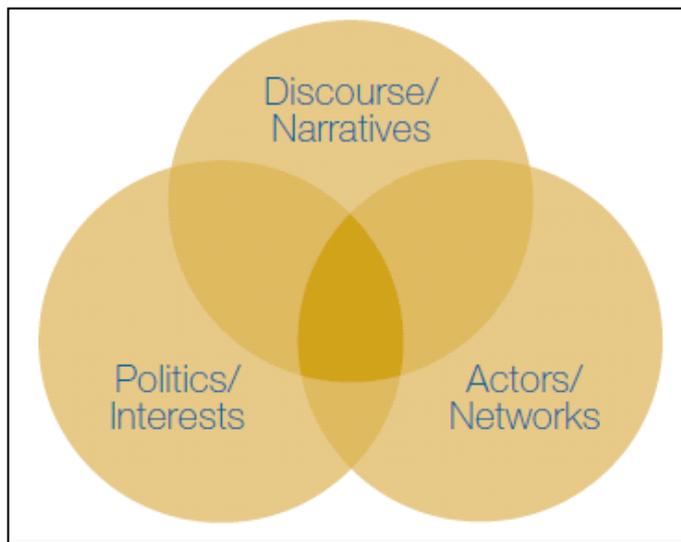


**Figure 9 The RAPID Model (Crewe and Young 2002)**

change also attribute importance to the three components discussed in this section.

One prominent example of this is a model prepared by the Research and Policy in Development project at the Overseas Development Institute that fuses “...political interests, formations of actors, and discourses, takes account of the role played by wider civil society and ‘street bureaucrats’,” (Crew and Young 2002: v);

and borrows ideas from psychology and marketing, to create a three-dimensional approach – consisting of context, links and evidence – to assist the investigation into the impact of research on policy (ibid). The three central elements of this approach appropriate the three components discussed in the preceding sections. For example, strains of what has been discussed above in the role of actors are a key part of what this model appropriates within the “context” as well as in “links’ (ibid); ideas of discourses and knowledge discussed here find resonance in the model’s explication of “evidence” (ibid); and echoes of the discussion on policy spaces (section 3.2.3) are found across the model’s three conceptual pillars but most notably in its treatise on “institutional settings” (ibid).



**Figure 10 The KNOTS Model (Woolmer 2006)**

Another model that clearly serves as the conceptual antecedent to the analytical framework employed in this thesis is that which was developed by the Knowledge, Technology and Society team at the Institute of Development Studies. This model attempts to review the broad categories into which models of policy processes may be divided to come up with a

framework that understands policy-making processes to lie at the intersection of three interlocking areas: discourse/narratives, politics/interests and actors/networks (Keeley and Scoones 2003). This model understands spaces to be “...the extent to which a policy-maker is restricted in decision-making by forces such as the opinions of a dominant actor network or narrative,” (Woolmer 2006: 13).

This chapter began by reviewing the concept of resilience and its key tenets, it then went onto analyse the current gaps in resilience thinking, it examined the manner in which resilience interacts with the allied concepts of disaster risk reduction, adaptation and vulnerability. Following this, the chapter went onto examine how resilience argues for the adoption of complex systems approach, provided an overview of the emerging

domain of ‘urban resilience’. The second part of the chapter explicated the analytical framework that will be employed within this thesis, exploring the manner in which knowledge and discourse, actors and networks and policy spaces combine to make policy change happen. The next three chapters contain the key findings of the research, with chapter seven containing a concluding analysis.

#### 4. Discourses

As discussed in the previous chapter, discourse or the manner in which knowledge is framed and deployed, is a critical component of the policy process. Discourses are value-laden views of the world and are technologies employed by the powerful to exert their influence. In section 3.2.1, it was also seen that a number of theorists including Foucault and Pecheux argue that discourses fundamentally operate in opposition to other prevailing discourses (Howarth 2005; Foucault 1977). This chapter will argue that climate change resilience is one such discourse on engaging with multifaceted urban issues and embeds within it a variety of assumptions on governance, management and policy-making. The chapter will then examine the manner in which this discourse and its components were at odds with existing/prevaling discourses. The discussion will end with an analysis of the impacts and repercussions of this clash of discourses within the policy context of the ACCCRN initiative as it unfolded in Gorakhpur and Indore.

##### 4.1 Discourses Accompanying the Climate Change Resilience Initiative

From the very beginning of primary research, it was apparent to the researcher that the discourse on climate change and ‘resilience’ as a policy response to it were inserted into local policy settings by the ACCCRN initiative. Just as for Foucault the idea of ‘discourse’ resembled “...a group of statements which provide a language for talking about, a way for representing knowledge about a particular topic at a particular historical moment,” (Hall 1997:72); knowledge on climate change and resilience was framed and inserted into Gorakhpur and Indore to lay a foundation for certain actions that were envisaged under the initiative. There are a number of clear pieces of evidence that exemplify the exogenous nature of the narrative around climate change and resilience.

During interviews conducted towards the beginning of the project in Maheva, Gorakhpur even certain individuals closely involved with the project demonstrated a low understanding of climate change and conflated it with issues such as pollution and waste disposal. “Climate change did not figure anywhere before the Rockefeller Foundation became involved<sup>7</sup>,” said a member of the project’s steering group in Gorakhpur. Similarly in Indore, the point person for the ACCCRN from the Municipal Corporation said that one of the big achievements of the project was the generation of an understanding of climate change because before the project, he said,

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<sup>7</sup>23-7-2010

We had never really understood that the sectors that we work in have anything to do with climate change; we had never even considered how water supply and waste management could be affected by climate change. So, this project marked the beginning of this realisation. In the first few meetings that we had with the project team, to tell you frankly, our officers were like what is this creature ‘climate change’ that they are going on about?<sup>8</sup>

Members of the donor organisation are also quite upfront about the fact of there being a very low baseline understanding of climate change issues in the local policy contexts where the ACCCRN is being implemented; on being asked about the biggest challenge that the project faced, a key member of the project team from the donor organisation says,

At the city level, there are varying levels of awareness of urban climate change and the need for climate change resilience in urban areas. The understanding of these issues is low and therefore there is a need for a heavier lift for these issues to gain traction.<sup>9</sup>

Similarly a member of ISET, an intermediary organisation closely involved in project processes, comments on understandings of climate change at the community level and is also very clear that climate change is external,

Q- Would you largely agree that at the community level, there is no talk of climate change and this concept doesn’t really exist?

ISET team member-Yes, not only at the community level but at the city level too. Basically, it’s the local issues and current problems that are the focus<sup>10</sup>.

Drawing on insights from the likes of Foucault who understood discourses as a form of knowledge deployed to constrain and regulate certain practices while propagating others (Hall 1997); Cannon and Muller-Mahn (2010) discuss the way in which changes in development and climate policies do not happen simply as a result of policy-makers rationally reacting to new problems or through simply, the availability of new information. Instead, they argue that changes are brought about, “...because certain types of knowledge, perceptions, awareness, interests and values are negotiated and become powerful in public discourses,” (ibid:10). Therefore, the ‘knowledge’, ‘perception’ and ‘awareness’ of climate change and resilience, were actively inserted into the settings in which the ACCCRN initiative was to unfold.

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<sup>8</sup> 23-10-2010

<sup>9</sup> 04-04-2011

<sup>10</sup> 22-03-2011

The next sections will delve in greater detail about the components and assumptions included in this discourse. How these were perpetuated/circulated and how they clashed with existing discourses in operation within these policy contexts.

#### 4.1.1 Discourse 1: Prioritising Hydro-Meteorological Problems

The ACCCRN is explicitly a ‘climate change’ resilience initiative. As such, it seeks to lay emphasis on tackling issues that are ostensibly linked to climate change. Therefore, the discourse around resilience that this initiative sought to institutionalise was hinged on uncovering and prioritising solutions to ‘hydro-meteorological’ problems. These are “...process or phenomenon of atmospheric, hydrological or oceanographic nature,” and are therefore linked to emission of green house gasses and the global dynamics of climate change (Prevention Web 2009). Even though the policy context in which this initiative was unfolding suffered from multiple problems of poor governance and fractured delivery of public services; the resilience initiative sought to build a narrative that gave priority to problems that were ostensibly linked to hydro-meteorological cycles and resolve issues around governance or service delivery mainly as a pathway to tackling these.

A key document introducing the initiative puts its concerns with hydro-meteorological phenomenon upfront when it notes,

Climate change will lead to warmer temperatures, greater variability in local conditions, and changes in the frequency, intensity, and location of precipitation and storms... How will these cities manage the stresses and respond to the inevitable shocks and surprises of climate change while assuring the wellbeing of their growing populations? (ISET 2009: 3)

This meta-narrative of the project percolated down to specific projects at the city level too. Therefore, the ACCCRN in Maheva was mostly focussed on employing multiple pathways to tackling the problem of water-logging. The ‘problem definition’ and ‘proposal description’ in the initial project concept for the project in Maheva states,

This ward is very susceptible to climate risks and has large waterlogged areas with low resilience capacities...the city faces water-logging caused due to climatic (erratic rainfall and excess precipitation events), natural (topography and gradients) and improper development and the particular ward represents the situation of the whole city (GEAG 2010:1).

Similarly on being asked about the key objectives of the ACCCRN, a senior member of the project team highlighted climate change issues and replied, "...building the base of capacity to understand the suite of impacts that climate change will bring to the city..."<sup>11</sup>. Moreover, there are questions around the degree to which this dominant discourse that emphasised hydro-meteorological issues, were congruent with the intrinsic priorities of local policy settings in it unfolded. This -- as it will be observed later in this chapter-- led to a high degree of resistance/skepticism from the community. A senior member of the project team notes,

...so we as the Rockefeller Foundation decided that we will work on urban climate change resilience, that was our decision, nobody else decided that, nobody at the community level, there wasn't even a community per se it was an institutional decision.<sup>12</sup>

One may ask what were the motivations for the ACCCRN initiative to bring this discourse (i.e. on the importance of hydro-meteorological problems) with attached priorities that were at variance from those existing endogenously within the policy context? The initiative, through its emphasis on climate change resilience in the urban context, is building on a burgeoning conceptual understanding of the critical impact that climate change can have on urban systems. Here is a brief review of key arguments discussed in detail in section 3.1.7; first, mostly cities are situated along coasts or rivers-areas that are at high risk from hydro-meteorological hazards (e.g. cyclones/typhoons/hurricanes, tornados, coastal storm surges, floods) (Dodman 2008, Gasper 2011, Lankao and Dodman 2011). Also, those living in informal settlements within urban areas are particularly vulnerable as these are usually built on land that is exposed to natural hazards; these lack insulation and air-conditioning are impacted severely by extreme events; they also lack tenure which impacts their rights as well as ability to claim insurance (Gasper et. al. 2011). Second, despite this heightened exposure and risk in towns and cities, "their municipal governments often lack the resources and/or inclination to implement adequate adaptation and preparedness measures. Yet the climate impacts predicted for these urban areas will be severe," (ibid:1). Third, processes of urbanisation themselves make cities very vulnerable to climate change, as "...urban development fragments, isolates, and degrades natural habitats, simplifies and

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<sup>11</sup>04-04-2011

<sup>12</sup> 23-09-2011

homogenises species composition, disrupts hydrological systems, and modifies energy flow,” (Alberti et. al. 2004: 1). Fourth, theorists have argued that as the world’s urban population has now surpassed its rural population, its time that urban areas occupy centre stage for action against climate change (Chelleri et. al. 2012, EUCCR 2012, Dodman et. al. 2013). Within this urban population “...it is estimated that one third of the world’s urban population (923.9 million) live in overcrowded and unserviced slums” (Wilbanks et. al. 2007: 364). Finally, despite climate change being a major issue for urban centres, a majority of research and funding for adaptation and resilience has historically been focused on rural areas (Dodman 2008, Dodman et. al. 2013). Therefore, it was multifaceted narratives of this nature that provided the ideological and motivational thrust to the discourses that this climate change resilience initiative sought to perpetuate

#### 4.1.2 Discourse 2: Preparing for Surprises, Change and Uncertainty

One of key components of the discourse inserted into the local policy setting by the climate change resilience initiative was around preparing for and engaging with surprises and uncertainty. This is in contrast to a frame of thought and action that is rooted in the present and engages with present-day exigencies. This subsection will first examine how the notion of readiness for prospective events/changes is a key aspect of resilience thinking and then provide a few indicative examples of how this was operationally reflected in the ACCCRN initiative.

Many tenets of resilience thinking discussed in section 3.1.2 explicate the way in which ‘resilience’ is inherently about preparing for a range of disturbances that may occur. According to a number of theorists, resilience is synonymous with the ability of systems to deal with uncertainty (Folke 2006, Norris et. al. 2008). These theorists underline how planning around the assumption of stability within a system is akin to a loss of resilience as systems constantly change and the future holds surprises (ibid). Ruth and Coelho (2011: 328) writing in the specific context of urban systems note that within these “...there is ample room for surprises to occur and for projections to fail.” Therefore Resilience Thinking is about undertaking actions that can buffer against exigencies arising in an uncertain future. Closely associated with this is the observation that resilient systems are those that prepare and plan for disturbances (Bruneau 2003, Rockefeller Foundation, 2009. Norris et. al. 2008). This includes actions such as the building in of redundancy or additional buffering capacity that allows for partial failure without

complete collapse when disasters strike in an uncertain future (Norris et. al. 2008). The heavy emphasis on iterative processes and learning within resilience is also another critical piece of the argument that the concept is, at its core, about engaging with change and the dynamism in the environment (Gunderson and Holling 2001; Wilby and Desai, 2010; Moser 2008; O'Brien and O'Keefe 2010). Moser (2008) underlines that resilience is not about returning a system to the same place as it was prior to a disturbance but about learning, imbibing lessons and evolving so as to not be vulnerable to the same shocks in the future.

The ACCCRN initiative, drawing on these conceptual elements within resilience thinking, integrated this 'future orientation' in the discourse that it sought to propagate on dealing with climate change and building resilience. Here are a few examples of this: first, at the broadest level, the ACCCRN aimed to spread awareness amongst city level actors (governments, civil society organisations, citizens and businesses) about the nature of climate change and that the future holds surprises that could combine with present day problems to exacerbate vulnerabilities. This prospective planning/future orientation of the ACCCRN is evident in the following excerpt from an introduction to the initiative,

ACCCRN works with city partners to identify the broad trends and ranges of climate projections for their regions and to develop resilience strategies around multiple what-if climate scenarios that do not depend on precise knowledge of the future, (ISET 2009:4).

Second, as evident from this excerpt, while being aware of the limitations of climate projections, the ACCCRN actively developed and employed these 'future scenarios' within the policy contexts in which it was unfolding. From the initial stages of the project when the donor and other coordinating organisations employed MAGICC-SCENGEN (a statistical downscaling packaged software) to develop scenarios for 50 Asian cities (Moench et. al. 2011); to later on in the project when they developed detailed climate scenarios for cities that were selected to participate in the ACCCRN such as Gorakhpur (using 9 different global circulation models), information on prospective changes in the climate were employed to orient policy actors towards preparing and planning for an uncertain future (Stapleton 2009).

Third, in Gorakhpur, one of the projects under the ACCCRN is the ‘Ward Level Micro Resilience Planning’ in the Maheva ward (an informal settlement) where the main impact of climate change as per the ACCCRN is water-logging (or extended periods of flooding). Here too, the climate change resilience initiative involves the community in Maheva and elements of the city government in not only dealing with present contingencies but also thinking about future changes. This was done by involving community members in iterative learning sessions (officially called Shared Learning Dialogues) that, among many topics, focused on trends in rainfall, temperature and other climatic patterns; and fostering an understanding of how these were impacting their lives and livelihoods (ISET 2009). Also, relying on global climate trends and future climate scenarios, the implicit logic guiding much of the action in Maheva was that problems of waterlogging would intensify in the future and so, the local population must undertake certain tangible actions to prepare for this. For instance the official description of the ACCCRN initiative in Gorakhpur lists the multifaceted problems of the city and then notes, “...climate change and its consequences...will exacerbate these problems...” (ISET 2009: 25). Also, relating the broad objective of the ACCCRN, a key member of the project team from GEAG in Gorakhpur said that they were told about how their climate was changing,

...they <Rockefeller Foundation/ISET>told us about the type of changes taking place and spoke of the level of carbon dioxide etc. Along with this they also said that apart from mitigation, resilience building should also take place<sup>13</sup>.

Therefore, there was a program to teach local farmers techniques of ‘flood resistant agriculture’, orient the residents of Maheva in recognising and treating water-borne diseases and modifying the drainage system so that it could cope with increasing stress brought by future GHG induced hydro-meteorological change.

This section has attempted an exploration of how preparing for surprise, change and uncertainty were key narratives that the ACCCRN initiative brought with it to the policy settings in which it unfolded. The manner in which information on future climate change was introduced subscribes to what Brock et. al. (2001) call ‘framing’ where value is imbued within seemingly neutral issues to make arguments for achieving certain policy goals. Urging various policy actors (including citizens and the Government) at the city

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<sup>13</sup> 28-07-2010

level to think about the future, helped present the issue of climate change and resilience in a way so as to elicit a policy response that the ACCCRN considered optimal.

#### 4.1.3 Discourse 3: Systems Thinking, Complexity and Cross-Sectoral Collaboration

As is evident from the preceding sections, tied to the grand narrative of resilience are several narratives on governance and management. One such narrative that this climate change resilience initiative carried was that of systems thinking and complexity manifested as collaboration between different parts of the city governance system and between different elements of communities in which it was operating. The ACCCRN initiative thus propagated a view of policy making, decision-taking and problem-solving that was centred on the coming together of diverse policy actors from different sectors of Urban Local Bodies (ULBs) as well as the citizenry. This section will first aim to demonstrate how this facet of the ACCCRN springs from the conceptual roots of resilience theory and then provide examples of how these were embodied in an operational context.

As discussed in section 3.1.6, intrinsic to the notion of resilience are the heuristics of the Adaptive Cycle and Panarchy (Gunderson and Holling 2001). The Adaptive Cycle describes how all complex systems (including socio-ecological systems) go through cycles of growth, conservation, release and renewal (*ibid*). The concept of Panarchy, draws attention to how such cycles of creative destruction take place non-synchronously at various levels within a system (*ibid*). Resilience, is therefore also derived from acknowledging that these changes are taking place and by ensuring that a system can ‘reorganise’ most efficiently. (See section 3.1.6 for a detailed explanation of the links between complexity, systems thinking and resilience).

A key part of understanding these cycles is to acquire knowledge of system dynamics through the participation of diverse actors interacting with diverse system components. In part, it is this element that has led a large number of theorists to underline how ‘diversity’ is a critical element of resilience thinking (Bahadur et. al. 2010, Bahadur et. al. 2013, Folke 2006, Manyena 2006, Holling 1973, Mayunga 2007, Adger 2000, Rockefeller Foundation 2009, Ostrom 2009, Foster 2007, Resilience Alliance 2002, Carpenter et. al. 2001, Cutter et. al. 2008, Nelson et. al. 2007, Dovers and Handmer 1992, Adger et. al. 2002, Berkes 2007, Osbahr 2007, Twigg 2007). Diversity has been interpreted in many

different ways, for example, those engaged in analysing the resilience of ecosystems argue for the presence of diverse functional groups so that a disturbance in one part of the system to a particular group does not trigger a system collapse (Holling 1973). Similarly, the inclusion of diverse constituencies, different knowledge systems and a variety of stakeholders that contribute information from different parts of a system to decision making processes around tackling climate change is seen to help build resilience to climate change (Osbahr 2007, Berkes 2007) (see section 3.1.2 for more detail). Speaking of urban resilience and adaptation in particular, Dodman and Satterthwaite (2008) argue that this is built through the involvement of a variety of stakeholders including those from the municipal authorities, national governments, utilities and civil society organisations. Mukhopadhyay and Revi (2012:309) too underline the importance of dialogue between “...government functionaries, political leaders, CBOs and NGOs, and private entrepreneurs,” to reducing vulnerability in urban areas. Ruth and Coelho (2011: 332) argue that the complexity and uncertainty inherent in urban systems is dealt with successfully only when “...different perspectives on the various system elements and their interactions are provided by different stakeholders from a range of scientific, public, private and non-profit communities.” Similarly, Bul-Kamanga et. al. (2003) also posit that collaboration between a variety of stakeholders including urban government bodies and civil society organisations is critical to reducing disaster risk in cities. In essence, resilience brings with it a thrust on understanding how diverse system elements interact, and not on analysing each element individually (Aronson 1996). Therefore, the discovery of these interactions is only possible through the wide participation of people from different sectors that together constitute the city system.

The discourse on adopting a ‘systems view’ was instilled in the local policy context in a variety of ways. First, policy environments in Gorakhpur and Indore are characterised by different policy actors working in silos and scant cross-sectoral collaboration. The ACCCRN introduces a fresh discourse of ‘working together to solve common problems’. One way in which this was seen was through the establishment of the ‘City Advisory Committees’ (CAC) or steering groups where members of the Municipal Corporation, those from planning authorities, businessmen and researchers were sitting together, perhaps for the first time and finding solutions to the same problem. Dodman and Carmin (2011:3) underlines the importance of this kind of collaboration to note that building resilience requires “...the involvement of a range of stakeholders including citizen

groups, the private sector, city and national governments, and financing institutions.” Commenting on the participation of this wide a range of policy actors from different parts of the system, a senior member of the project team from the Rockefeller Foundation says,

I’ve been working in development for twenty years and I have never seen a situation where we have seen such a mobilised Chamber of Commerce on a long term strategic issue ... they are finding an opportunity to engage in the process that is cutting across sectors, cutting across a spectrum of actors ... there are other examples of participation from government actors who normally are marginal to these processes, for instance, technical people from the Department of Meteorology, Urban Planners, architects and the School of Engineering.<sup>14</sup>

Second, the discourse on systems thinking, complexity and working to analyse and solve problems systemically was also perpetuated at the community level. One of the interventions in the city was the formulation of a citizen’s forum to run a solid waste management (SWM) scheme in a neighbourhood which ensured that garbage is collected from people’s door steps and then sorted/recycled appropriately. Discussions with local residents revealed, that through their involvement in this forum they started to understand the linkages between the proper disposal of garbage, the clogging of drains and the flooding of their houses in the rainy season. For the first time, they could link the seemingly disparate components of the same system to solve a problem effectively. Commenting on this aspect, a senior member of the project team said,

Yes, the community has now at least begun to think systemically...we used causal loop diagrams to understand the vulnerability of this neighbourhood, essentially so that people should realise that all these issues are interlinked... and that solving a particular problem requires an engagement with a variety of factors and issues...

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Third, in Indore one of the interventions under the resilience initiative is a Pilot Project on Conjunctive Water Management (PPCWM) that forms ‘community groups’ to help tackle water scarcity in four neighbourhoods. In speaking with the community group in one neighbourhood, the researcher learned that through their involvement in this group the

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<sup>14</sup> 11-03-2011

<sup>15</sup> 30-07-2011

residents started to see how their individual capacity to cope with water scarcity is inherently linked to the actions of those around them. A community member said,

Like me, some people who already had water-harvesting systems weren't bothered, they said, we've already got this system so why do we need to be involved in this initiative? Through discussions in the group I learned that even though I may have this system, if others don't get it, the total water level in the neighbourhood will dip.<sup>16</sup>

Also, earlier residents were concerned in covering the water deficit using alternate methods of supply but through the water management project they started to see linkages between ground water levels, wastage, judicious use of water to understand the value to a sustainable and systemic method of managing this scarcity.

Just as Cannon and Mueller-Mahn (2010:10) argue, "...adaptation to climate change is not simply a response to meteorological parameters, but it is primarily driven by discourses about these phenomena in a society." Similarly, the ACCCRN sought to engender a particular response to climate change by propagating the resilience discourse that was underpinned by a narrative on systems thinking and complexity. Moreover, just as Fairclough (1992:64) understands discourse to be "a practice not just of representing the world, but of signifying the world, constituting and constructing the world in meaning;" the ACCCRN seeks to present the context in which it is unfolding as a complex system that can only be understood through particular tools and instruments extended by resilience thinking.

#### 4.2 Technologies of Discourse Perpetuation

After having examined some of the narratives entwined with the ACCCRN initiative and before looking at the existing discourses in the policy context with which these clashed, it would be instructive to examine the manner in which the narratives and discourses discussed in the preceding paragraphs were perpetuated and circulated. Distilling Foucault's wide ranging and nebulous pronouncements on discursive practice, Mills (1997) argues that the concepts of 'commentary', 'academic discipline' and 'rarefaction' capture the cornerstones of the theorist's views on the establishment and flow of discourse in society.

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<sup>16</sup>18-01-2011

First, ‘commentary’ simply refers to the phenomenon in which validity and credibility of discourses is established by the act of other people commenting on them (ibid). Narratives that attract analysis, discussion and comment by others acquire qualities such as “richness, density and permanence,” (ibid:61). Howarth (2005: 57), describes ‘commentary’ as, “...acts that take discourses up, transform them or speak of them, thereby legitimizing or bolstering their status.” Just as, for instance, the analysis of a text by a theorist is not merely an act of scholarship but infers legitimacy on that text, further discussion on discourses lends to those discourses the status of knowledge or truth (Mills 1997).

Second, discourses come to be recognised as such through the paradigm of the ‘academic discipline’ (ibid). Simply put, this determines what can be said and regarded as true or false within a given field of knowledge. Howarth (2005:60) cites Foucault (1981) to explain this notion further and to underline that a discipline is not only about including certain kinds of knowledge but about excluding others too, “...within its own limits, each discipline recognises true or false propositions, but it pushes back a whole teratology or knowledge, beyond its margins.”

Third, ‘rarefaction’ is also a technology through which discourses are coalesced, recognised and established (Mills 1997). At its core, ‘rarefaction’ is a set of rituals that confers authority and the aura of truth to narratives and discourses (ibid). For example, “...in Foucauldian terms, assertions about the prospects of global warming become statements when uttered by suitably qualified scientists and climate experts who present plausible theories and evidence to justify their arguments,” (Howarth 2005: 53).

These three technologies were employed in different measures for the establishment and circulation of the aforementioned discourses through a variety of instruments.

First, the technology of ‘commentary’ to perpetuate a certain discourses was evident in the ACCCRN initiative. The discourse on ‘resilience’ for instance was acceded supremacy due to repeated references and analyses of it in numerous technical documents, high level meetings and workshops. The ACCCRN from the beginning was explicitly framed as an initiative to build ‘resilience’ to climate change and through this act of powerful international players such as the Rockefeller Foundation and ISET

attaching themselves to this narrative it acquired a certain legitimacy and dominance. For instance, ISET (2009) in an initial framing document for the initiative engages with academic theory on resilience in socio-ecological systems and provides analysis of how tenets of it such as redundancy, flexibility, capacity to reorganise and capacity to learn can help cities deal with the exigencies of a changing climate. In another instance, the researcher was privy to a capacity-building session where external experts from ISET were brought in to Gorakhpur to provide an immersion into resilience and concepts allied to it to the project team. Therefore, just as for Foucault a discourse was established and gained supremacy merely through the act of others discussing and commenting on it, resilience as a discourse came to be established through a repeated commentary on it by various prominent actors in diverse forums associated with the ACCCRN (Mills 1997). As has already been discussed in the paragraphs above, a focus on 'climate impacts', 'system thinking and complexity' as well as 'preparing for surprises and change' were intrinsic narratives part of this larger discourse and therefore came to be perpetuated within the settings where the ACCCRN unfolded.

Second, the technology of 'academic discipline' was also seen to be in operation to perpetuate the discourses described in section 4.1. The discourse that lent primacy to hydro-meteorological problems within cities and argued for their prioritisation was an extension of the discipline of research around climate change. Just as Mills (1997) argues that 'academic discipline' as a technology for discourse perpetuation, determines what can be regarded as true; the ACCCRN by rooting itself within the scientific understanding of climate change laid claim to be 'truer' than other discourses that it was in contest with (e.g. those that emphasised problems that had no ostensible link to hydro-meteorological cycles such as illicit alcohol- to be discussed later in this thesis). An example: even though those driving ACCCRN processes were vocal about the limited value of climate information, the deployment of downscaled climate projections derived through established, global scientific methodologies and models (e.g. Global Circulation Models) tied the discourse (that urged attention to problems with a hydro-meteorological link) to a credible, accepted academic base. Taking another illustration, towards the beginning of the ACCCRN in Gorakhpur, a meeting was convened to make the case for the uptake of the initiative by the city to key members of the city system (representatives of government departments, businesses, prominent citizens etc.). Those assembled requested information on the impacts of climate change of Gorakhpur and the answers were supplied by experts

(members of ISET, from out of town) who subscribed to a global, technical idiom that was placed within the boundaries of a recognised academic discipline. Therefore, with the conscious correlation to a discipline, it also became easier for the resilience initiative to tacitly argue for the exclusion, or in the very least, give lesser priority to the issues, narratives and discourses that did not correlate as strongly to the characteristics of a recognised canon of knowledge.

Third, this climate change resilience initiative also employed ‘rarefaction’ as a technology to circulate and perpetuate certain discourses (Mills 1997). This refers to the material circumstances that attribute weight to certain discourses. ‘Rarefaction’ was evident in a number of ways; first, an important expression of this was that the ACCCRN employed and laid emphasis on ‘expert opinion’ and the views of those thought to be technically adept. For instance, the scientific rationale for this climate change resilience initiative in Gorakhpur was laid through an intense phase of research led by noted experts in various fields. They prepared ‘sector studies’ or analyses of the way in which different parts of the city system engage with climate change and its impacts (solid waste management, the geo-hydrological profile of the city, the use of plastics, transportation, energy etc.). A member of the project team on being asked about these sector studies said that these, “... have been entirely prepared by the specialists.”<sup>17</sup> This body of evidence coalesced by recognised specialists and presented in formats that were broadly in the tradition of scientific publishing, added to the legitimacy and authority of the climate change discourse in Gorakhpur and Indore. Second, the discourses described in the previous section all came to be established because they were part of certain larger structures. They were pushed by credible local NGOs that had built a reputation for itself in the field of environmental action/research, the NGO was in turn supported by international, intermediary organisations such as ISET (an organisation of natural and social scientists engaging with environmental change) and overall, by the Rockefeller Foundation-an influential, international, philanthropic organisation. This apart, the ACCCRN also came with attendant funds, a plethora of ‘technical’ information and a subscription to international forums/meetings/workshops. All these material aspects lent momentum to the discourses attached to the initiative.

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<sup>17</sup>19-10-2010

### 4.3 Prevailing Discourses in the Local Policy Context

An understanding of how discourses operate goes hand in hand with an understanding of how they ‘come to be’ by actively opposing other ways of viewing problems and issues. As seen in section 3.2.1 it was seen how Mills (1997:10) touches upon this point to note how there is no discourse that exists independently and all discourses may be understood “...as a standpoint taken up by the discourse through its relation to another, ultimately an opposing discourse.” Similarly Howarth (2005) also acknowledges this characteristic of discourses to argue that they are inherently political and that their establishment entails the creation of antagonisms as well as ‘insiders and outsiders’. Foucault (1977) too underlines the oppositional nature of discourses when he comments on how discourses are about power relations that intrinsically coalesce in opposition to other systems of power. Mills comments on this aspect of Foucault’s theory to note that all knowledge was product of power struggle over whose version of events would gain primacy (1997). Cannon and Muller-Mahn (2010:11) who engage with discursive practices specifically in the context of climate change impacts also deliberate over this aspect of the manner in which discourses function. They write,

...discourses are virtual arenas in which actors meet to carry out controversies over a particular object in order to gain influence over the way the object is going to be transformed or managed. ... One characteristic feature of discourses is their inherent tendency to seek domination over competing actors and directions of the debate.

Hall (1997) also touches upon this aspect of the operation of discourses to argue that just as a discourse constructs meaning and legitimise a particular way of viewing events, it also marginalises and excludes other narratives. She notes that a discourse by definition “...rules out, limits, and restricts other ways of talking ...or constructing knowledge,” (ibid: 72).

Therefore, after having looked at examples of important discourses tethered to the climate change resilience initiative under study in the preceding sections, it would be important to examine some existing discourses in the local policy context with which these clashed.

#### 4.3.1 Prevailing discourse 1: Varied Problems

The discourse that posited hydro-meteorological problems as key concerns to the local policy contexts in which the project was unfolding was in stark contrast to the prevailing

discourse that emphasised a range of other problems with no ‘ostensible’ link to climate change. Once engagement with the community began, there was an emergence of endogenous priorities that were marginalised so as to maintain the integrity of dominant discourse and the accompanying, internal logic of the climate change resilience project. One such problem that emerged but around which project processes skirted, was illicit alcohol. Residents of Maheva, Gorakhpur are engaged in the production and consumption of illicit liquor, which then causes a large number of cascading social, financial and health problems. The primacy of the illicit alcohol issue came up in a range of conversations with diverse individuals embedded in the context of Maheva, it was also cited as the second highest cause of deaths in the household survey that GEAG conducted prior to starting activities in the neighbourhood. In an interview with a volunteer from the project, the researcher broached the topic of alcohol and learned from the respondent that it was an immensely important issue. As an example, the volunteer cited a participatory meeting that had been recently conducted with the residents of the ‘Chota Maheva’ locality and pointed out that even though a number of participants were clearly inebriated during the meeting, the issue of the copious consumption of illicit alcohol figures nowhere in the project plans. The researcher attended this particular participatory exercise in Chota Maheva, which was marked by inebriated people getting into fights during the participatory exercises and certain communities members being forcefully removed from the scene. On being asked to describe, in their words, how serious the problem of production and consumption of ‘moonshine’ was in Maheva two volunteers said,

Volunteer 1- Many men in Maheva return home at night drunk and then beat their wives. In the morning, since many of them don't work, they ‘hit the bottle’ again and stay in a stupor for most of the day. I just want this problem to go away-that will be very good for Maheva.

Volunteer 2- Yes, they may not eat their meals but drink, they must. If you ask me, this is the biggest problem in Maheva. Till this problem is not solved, things cannot get better for Maheva<sup>18</sup>

The issue with illicit alcohol is one poignant illustration of the assertion of a wide range of theorists that discourses are always coalesced in competition with other discourses and

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<sup>18</sup>25-2-2011

the structures that support them. The forthcoming chapters will touch upon other priorities such as the lack of government issued ID cards, a community centre, toilets etc. that the community highlighted endogenously. Just as Hall (1997) argues that discourses make meaning by marginalising of other narratives, it is seen that hydro-meteorological issues around waterlogging gain prominence at the cost of other issues.

This point also resonates with one made by Van Aalst et. al. (2008) in their analysis of Community Risk Assessments and Community Based Adaptation. Here they note "...the need for outsiders to understand that for most people, the main problem is daily life and livelihoods," they go onto note that any program to reduce vulnerability from climate impacts at the community level "...must respect people's priorities and can only deal with hazards in the context of promoting "development" in the wider context, (ibid: 169). The resilience initiative would have done well to acknowledge and integrate this perspective in its design (more on this in section 4.5 and chapter 6).

#### 4.3.2 Prevailing discourse 2: Dealing with Present Contingencies

The discourse on 'preparing for surprises, change and uncertainty' that was introduced by the resilience initiative was in stark contrast to the prevailing discourse in the local policy context that focussed on dealing with present contingencies. In both Gorakhpur and Indore, there was a multitude of cascading civic problems unfolding everyday that the local governance machinery was sharply focussed on dealing with. Therefore, the dominant narrative circulating amongst those charged with running the two cities did not include an adequate 'future orientation'. There are a number of examples of this; a senior member of the project team also underlined the manner in which the authorities were explicitly 'rooted in the present', he says,

At the end of the day climate change remains for some people a kind of distant priority when you think about all the challenges the cities face today particularly in places like India...we spoke to the Mayor of Indore and he said that 'I have other challenges and I have no idea how I can deal with the garbage I have today or the water troubles I have today so don't even talk to me about twenty years from now'. The reality is that climate change, whether the government, whether the NGO's or whether the public, it is obviously not the first order priority in their day-to-day life.<sup>19</sup>

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<sup>19</sup>22-3-2011

Also, while interviewing a key functionary of the Indore Municipal Corporation (IMC) (the main Urban Local Body in the city), it became apparent that this project was exposing them, perhaps for the first time, to the critical importance of engaging with future change. On being asked about the initial contact of the Corporation to the project, one of the respondents said,

Initially our officers attended the meetings that were convened by the project but they did not even understand what was being discussed. You see, they are so engrossed in dealing with their routine work and problems that these insights around how the climate is changing and what the impact of this, will be was lost on them...<sup>20</sup>

Scratching beneath the surface to understand better why these discourses came to dominate yields some clear material reasons. Climate change is not understood to be a pressing priority for key political actors and civil servants, as action to help vulnerable communities become more resilient today is seen to mitigate adverse events at some future date, usually beyond the next election or transfer and hence, investing time/money is not seen as politically expedient. Conversely, these actors in the rapidly expanding cities such as Gorakhpur and Indore are faced with a multitude of immediate problems and not attending to them can have tangible negative consequences for their careers. Therefore, a senior member of the donor organisation when asked about the major challenges faced by the ACCCRN initiative said,

I think one of the challenges has been really thinking about longer-term measures that are needed and how those support and build off of the nearer term interventions which is what we tend to get proposed a lot more.<sup>21</sup>

Discourses, according to Keeley and Scoones (2003), both shape and reflect institutions and politics around them. Therefore, the evidence discussed in this section also adds to an understanding of how the perpetuation of discourse is a function of power. The narrative that underlines the investment of precious, scarce resources as well as administrative and political capital in solving today's problems pervades the local policy context because it is directly linked to mechanisms of particular local actors maintaining their grip on power. As it will be discussed in the sections that follow, the opposing narrative that urged greater future orientation gained little traction among elements of the city administration

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<sup>20</sup>23-10-2010

<sup>21</sup>10-06-2011

because it threatened to destabilise these underlying dynamics of power accompanying the prevalent discourse.

#### 4.3.3 Prevailing discourse 3: Scant Cross-Sectoral Collaboration and Compartmentalised Policy Context

While the resilience initiative brought an emphasis on ‘systems thinking, complexity and cross-sectoral collaboration’, it clashed with a prevailing discourse of compartmentalised policy making and very little cross-sectoral collaboration. The governance contexts of Gorakhpur and Indore are characterised by different government agencies working in isolation from each other. There is a lack of coordination between departments performing allied functions. For instance, the Gorakhpur Development Authority (GDA) (the agency that is charged with designating land use and developing new urban colonies/neighbourhoods) and the Gorakhpur Municipal Corporation do not have streamlined channels of communication and contact. A member of the project team cited an effective example not specific to ACCCRN to demonstrate the isolation of government agencies from one another. He said that the new office of the GEAG (the local NGO leading the project) was located in ‘Taramandal’- a very new neighbourhood developed by the Gorakhpur Development Authority (GDA) and due to its location by a lake and its well-spaced plots of land was considered to be ‘upmarket’. He said that this new, expensive neighbourhood aptly demonstrated the lack of coordination between the two agencies because even though the plots of land in the colony had been sold and people had been living in them for the past three years; the Municipal Corporation had still not sanctioned the laying of a sewerage network. As a result of this, each plot had its own septic pit-many had been built unscientifically and therefore the ground water in Taramandal was contaminated with raw sewage. To change this prevailing mindset -- that resulted in the lack of coordination between Government agencies -- the ACCCRN in Gorakhpur, had spent a considerable amount of time, in the establishment of the ‘Shared Learning Dialogue’ (SLD) process that was based on the principal of relevant policy actors from diverse government departments coming together to discuss the same issue. A senior member of the project team from the donor organisation comments on exactly this issue when he says,

I think the other challenge has been the reality of urban planning and urban governance and how siloed it is, so you have all these different departments that work very independently from each other and there is poor co-ordination

often...we're dealing with fairly weak and low capacity institutions who don't have, for example, any experience in working collaboratively with civil society.<sup>22</sup>

Apart from this, almost all respondents who participated in the project at the city level spoke of how the ACCCRN (through SLDs) brought representatives of different government agencies together for the first time. The compartmentalised mind set of the governance machinery of the local policy context was also reflected through the numerous incidents of conflict that erupted when the resilience initiative brought individuals from different sectors together for discussions. As there had been no precedent for joint decision-making and deliberation in the policy contexts before, individuals from one sector found it difficult to understand or agree with the perspectives of those coming at the same issue from a different point of view. The novelty of this process was effectively captured by a member of the project team charged with running consultations with actors from diverse sectors, he says,

This cross-sectoral view is a new thing (instead of a siloed view); earlier the guy working on sewerage would work on sewers, the person charged with solid waste management would work on garbage but that these things are connected is an understanding that the ACCCRN has brought to these people<sup>23</sup>.

One may argue that the lack of collaboration between departments was not a 'discourse' as such but merely a reflection of poor governance. There is, however, some evidence to the contrary. Compartmentalisation of briefs and the close definition of tasks and responsibilities are not necessarily emblematic of misrule but a persistent narrative of 'efficiency' with a historical and academic precedent. Just as a 'Fordist' approach to manufacturing is founded on each worker performing a specialised task on an assembly line, the insertion of bureaucrats within particular compartments or domains of specialisation is meant to maximise the benefit from invested labour (Litter 1978). Taking this argument further, Weber (1997) is seen to argue that bureaucracy, at its core, is the division of labour applied to administration. Therefore, his idealised notion of bureaucracy was centred on the idea of efficiency where output would be maximised while minimising inputs (ibid). Welp et. al. (2007:305) critique this prevailing facet of bureaucracy to note that, "...the compartmentalisation of departments that are hierarchically linked generates rigidity in management and greater complexity."

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<sup>22</sup> 23-09-2011

<sup>23</sup> 21-07-2010

In essence, stove-piping bureaucratic functioning is then a discourse, narrative or value-laden configuration of thoughts and beliefs, that posits this as a solution to problems of governance that clashed with the narrative of systems thinking introduced by the resilience initiative.

#### 4.4 The Clash of Discourses: Outcomes

After having looked at the discourses embedded within the climate change and resilience initiative, how they were established/circulated and the discourses that they opposed, this section will aim to trace the outcome of this clash of discourses inserted into the local policy context with those that were already in operation.

##### 4.4.1 Outcome1: Resistance and Scepticism from Communities

In section 4.1.1 it was seen how the climate change resilience initiative came with a discourse that prioritised problems that had an ostensible link to the dynamics of climate change; section 4.3.1 then aimed to demonstrate that this was in contrast with a prevailing discourse that considered other problems (those that were not linked to hydro meteorological cycles) to be of prime importance to the local policy context in which the project was unfolding. This section will seek to argue that this incongruence between the discourses accompanying the climate change resilience initiative and the prevailing discourses resulted in a high degree of scepticism and resistance from the communities that the initiative aimed to benefit.

On being asked about the challenges faced by the initiative, a number of those working on the ground replied by saying that scepticism, mistrust and resistance by communities they were intending to work with was a substantial issue. They reported numerous incidents of non-compliance with data collection exercises (e.g. household surveys), reluctance by community members to attend participatory meetings convened by the initiative and a general lack of interest in engaging with a range of other project processes. For instance, here are some excerpts from group discussions with volunteers working for the project in Maheva, Gorakhpur that demonstrate the resistance put up by the community members towards participating in meetings convened by the project.

Q- What were some of the difficulties you faced?

A1- The difficulty I faced was in getting people to attend meetings.<sup>24</sup>

A2-I faced some problems in that even after explaining to them, many people did not turn up for the meetings.<sup>25</sup>

A3- Yes, we had to repeatedly go and talk to people about attending, they did not want to come.<sup>26</sup>

Another volunteer gave a poignant example of the tangible problems this scepticism caused in completing important processes when he said, “I approached a home to get those inside to complete the project questionnaire but those people abused me and told to never come back.”<sup>27</sup> Another volunteer described how a few households started to help fill the questionnaire but discontinued the process shortly after. Similarly, in Indore too, people reported substantial problems. The secretary of one of the community groups formed as part of the pilot project on conjunctive water management related the problems he had in getting people together, “...we had to go around in our cars, pick people up and bring them for our meetings, we really had to convince them...”<sup>28</sup>. Also, from a different neighbourhood in the same city, another secretary of a user group related the progress that he had made in linking the residents of her locality to the project to note, “...but still there are people who are sceptical and think that all this is a waste of time.”<sup>29</sup>

When these respondents were asked for their opinion on what led to such scepticism and resistance from the community towards the project, they cited a few different reasons; but the central strain running through these was a disconnect between the initiative and the local population in the manner in which they understood local realities and framed priorities. A number of respondents closely associated with the project at the community level, explained how the community did not understand or relate to the central thrusts of the initiative. A volunteer working in Maheva, Gorakhpur on being asked about the reasons for problems in community engagement said, “...some people were not understanding what we were attempting or what was taking place in the meeting.”<sup>30</sup> Extending this point is the lady from the project team charged with running the participatory exercises at the community level in Maheva, Gorakhpur she says,

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<sup>24</sup> 19-5-2011

<sup>25</sup> 21-5-2011

<sup>26</sup> 19-5-2011

<sup>27</sup> 25-2-2011

<sup>28</sup> 18-1-2011

<sup>29</sup> 17-1-2011

<sup>30</sup> 21-5-2011

In this locality we were focussed on issues such as agriculture and sanitation but the people participating wanted to discuss other day-to-day issues of importance to them. Therefore, since we were overlooking these issues, it is natural that there will be limited interest from the communities too; the next time around we should formulate these exercises keeping their priorities in mind.<sup>31</sup>

Similarly, a member of a ‘user group’ from Rahul Gandhi Nagar, Indore there is a difference in the way that his neighbourhood and the initiative understand and frame local problems. The project, for instance, is attempting to perpetuate a narrative around the holistic, judicious use of water through multiple methods that include reduced wastage and water harvesting. The local residents on the other hand, understand water issues differently by establishing their own systems for bridging shortages such as through the purchase of mobile water tankers as well as through patron-client networks (more on this in chapter 5). On being asked about how they currently cope with water shortages, a resident of the locality explained that reach out to the family of the local municipal Corporator who “arrange water tankers for us<sup>32</sup>.”

Commenting on this issue Van Aalst et. al. (2008: 169) note that the immediate concerns of community members can provide effective entry points for assessing “...the measures they can take for dealing with additional trends, shocks and increased uncertainty; not on a stand-alone basis, but integrated into broader livelihood strategies.” The dissonance between the narratives constructed and adopted by the climate change resilience initiative and existing discourses in circulation amongst the community led to scepticism. This scepticism translated into reluctance from the community to participate in key project processes. This in turn created obstacles (e.g. increased amount of time and labour spent on convincing local residents) for an initiative that was hinged on participation from communities; on being asked about the importance of deep participation from the intended beneficiaries of the ACCCRN; a member of the donor organisation charged with designing and running the ACCCRN said, “...from early on, my thinking was that this project should lie in the participatory development discourse. My sense is that there is no way to do this work using only an expert driven model.”<sup>33</sup> Moreover, one strand of

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<sup>31</sup>25-4-2011

<sup>32</sup>19-01-2011

<sup>33</sup>04-04-2011

academic opinion talks about how increasing resilience is centrally about reducing vulnerability (Gaillard 2010.) Reducing vulnerability is about understanding the way in which society functions and the manner in which relationships within it are structured, through a meaningful engagement with individuals in a system (Brooks 2003, Brooks et. al. 2005, Smit and Wandel 2006, Dow 1992, O' Brien et. al. 2004, Alwang et. al. 2002, McLaughlin and Dietz 2008). Therefore, the problems in linking with communities also threaten the central mandate of this resilience-building initiative. This also resonates with the observation by Carmin et. al (2012) who, writing in the context of Quito and Durbannote that giving credence to local/endogenous priorities was key to securing support for adaptation processes unfolding in the city. The Mid Term Evaluation report (Barr 2011) of the ACCCRN, in a number of places notes the inadequate engagement of the initiative with people/social systems and expresses concern at the possible negative consequences of this.

#### 4.4.2 Outcome 2: Weak Engagement of Urban Local Bodies

Just as the previous section discussed scepticism from the community as one fallout of the incongruence of discourses harboured by the initiative with those already in circulation, this section will examine the manner in which the low engagement of Urban Local Bodies (ULBs) in the project, was another such fallout.

The donor conceptualised this resilience initiative as one that would progress with the heavy involvement of ULBs and there were a number of reasons for this. Primarily, as the donor has a relatively small budget, their model was based on developing small-scale interventions that could be then replicated and scaled up by other donors and by city governments who command substantial resources and authority for the development of city systems. Explaining this is a senior member of the project team from the donor organisation who says,

What we need is government involvement in trying to scale those up, so ward micro level resilience planning <the initiative in Maheva, Gorakhpur> is a community-based initiative but what we have said is that take the experience of that, document it and work with the government to see that it can be recognized at the highest scale...

Another ostensible reason for involving the government was the donor's view that ULBs are the primary stakeholders and without their consent, the project and the different

interventions funded as part of it would be unable to meet their goals. Also, government participation was seen as important because its different departments have immense amounts of information about different parts of the city and access to this knowledge was thought to be critical to any resilience building plans within these cities. This emphasis on involving the municipal corporation resonates with literature on urban resilience, for instance, Dodman and Satterthwaite (2008) note that municipal governments are key to successfully dealing with climate impacts as they have the primary responsibility for a wide range of infrastructure and services needed for reducing vulnerability. Also, Martins and Ferreira (2011: 39) note that "...that local and subnational governments often appear as key actors in coordinating, facilitating and implementing climate change actions." Similarly Roberts (2008) and Carmin et. al. (2012) too underlines the importance of the Municipal Corporation in processes of urban adaptation. Therefore, during the initial phases of the project, the Municipal Corporation in Indore and in Gorakhpur were thought of as the main stakeholders and a considerable amount of time and effort was invested in securing their participation. The degree of uptake by the Government was however, much less than anticipated.

On being asked who the most important people involved in the project were, a senior member of the project team in Gorakhpur gave a number of names and positions (community mobilizers, project team etc.) but did not mention anyone from the Government. Most respondents agreed that Gorakhpur was a city where only minimal progress had been made with regards to securing government participation. A senior member of the project team in Gorakhpur noted,

There are no two opinions about the fact that there has been far less uptake by the government than we had originally hoped for. We're really hopeful that this initiative would gain traction in the Municipal Corporation but it has not been so...<sup>34</sup>

Where participation of the local administration was secured, it was with great difficulty. For instance, a member of the City Advisory Committee told the researcher that he was aware that sometimes government departments had to be contacted eight to 10 times and be pleaded with to attend project meetings. Another good example of these challenges came from a member of the project team charged with running the Pilot Project on

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<sup>34</sup>30-7-2011

Conjunctive Water Management in Indore (a pilot project under the ACCCRN). He highlighted that it is the project's responsibility to ensure that the concerns of the water user groups in the four localities (where the project was running) were communicated effectively to the authorities but this was a process fraught with difficulties,

The involvement and attitude of the Indore Municipal Corporation regarding this water supply issue is not very good. They are too busy in their own work so when we organise a stakeholder's meeting, I understand the top-level people cannot attend but even the junior people who need to understand the problems of the people and possible solutions don't attend. The Users' Groups complain that nobody hears them<sup>35</sup>.

He went onto describe one meeting where they had 30 members of a User's Group assembled but he was unable to bring even 3 members from the ULB to the meeting. Moving away from the specificities of the city context, discussions with the donor organisation also revealed their familiarity of with the lack of enthusiasm from the government towards the ACCCRN. In an answer to a question on the major achievements of the ACCCRN, a senior team member from the Rockefeller Foundation enumerated a number of points but also noted, "...we've been less successful with the government so far."<sup>36</sup> Similarly, another member of the Foundation, travelling through Gorakhpur to review project progress agreed that getting the government on-board has been a challenge across different cities in which the project is operating, she says "...there have been several attempts at engaging different cities <city governments> that have not materialised into a partnership."<sup>37</sup>

There are a number of reasons for this poor participation from the ULBs in the ACCCRN in Indore and Gorakhpur. These include poor governance, red-tapism and a lack of incentive (these will be explored through this thesis)<sup>38</sup>. This apart, one important reason was also that the sophisticated assumptions of systems thinking, cross sectoral collaboration and prospective planning were in contrast to the way in which these organisations functioned. A member of the project team cited the dominance of a certain narrative of bureaucratic functioning that was in contrast to the views espoused by the

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<sup>35</sup>14-1-2011

<sup>36</sup>23-9-2011

<sup>37</sup>26-11-2010

<sup>38</sup> Bulkely and Broto (2012) in their paper on urban governance and climate change also note how institutional capacity and political economy of city governments pose significant challenges to engaging with climate change.

project as a reason for the Government's low involvement in the project. She spoke about how the Government in her opinion has extremely rigid procedures and is closed to new ways of tackling problems. She said that if, for instance, she advocated for greater decentralisation in the processes of completing certain tasks and even demonstrated that it would be cheaper and better, the government would still not budge because they are locked into a certain mind set and a particular system of functioning<sup>39</sup>. Approaching this same theme from a different perspective, are team members from ISET who, in separate interviews with the researcher, touch upon the way in which the project's future orientation was incongruent with the way in which the local administration functioned and cite that as a reason for their poor participation. One said that the city administration was centrally concerned with "day to day"<sup>40</sup> activities and hence it was difficult to involve them in a project that was more concerned about prospective change. Butressing this point, the other team member from ISET said,

In Indore the commissioner told me that, 'who has the time to deal with problems that are going to impact 20 years later, we are fire fighting daily, I don't have time to think about tomorrow! Some colony is not getting water tankers, someone has died on the road...'<sup>41</sup>

Therefore, the somewhat radical narrative on governance and management that this resilience initiative brought was starkly at odds with the way that the local administration functioned and hence there were substantial challenges in engaging members of the ULB. These included the difficulty in getting key officials to attend meetings to contribute to plans and processes; in eliciting official support for certain interventions; and more generally, in ensuring that the Governments imbibes lessons and alters its plans and priorities accordingly.

#### 4.4.3 Outcome 3: Climate Change Resilience or Disaster Risk Reduction?

In section 4.1.2 it was seen how resilience came with an explicit future orientation and section 4.3.2 described how this clashed with the prevailing emphasis on solving present

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<sup>39</sup> Her exact words were "The government on the other hand has extremely tight procedures, if we tell them that they should build the sewer in a decentralised way and tell them it will help them and be more cost effective, even if they understand they won't want to do anything as it is a more arduous procedure and they have no reason to do it, they will need all kinds of permissions and all those with personal interests in keeping the old system will get cut out-their decision making processes are very different. This is why they can not innovate." 27-07-2010

<sup>40</sup>21-4-2011

<sup>41</sup>23-3-2011

problems. One of the fall-outs of this dissonance was that a number of interventions undertaken as part of climate change resilience initiative resembled disaster risk reduction activities. In section 3.1.5 we saw how DRR is associated with short time horizons and an engagement with ‘present risks’ (Mitchell and van Aalst 2008, Thomalla et. al. 2006, UNEP 2010, Mercer 2010); therefore, as the policy context and policy actors were unable to fully imbibe/appreciate the sophisticated assumptions on engaging with an uncertain future that accompanied the resilience narrative, a number of activities taking place under the aegis of the ACCCRN resembled disaster risk reduction activities.

The Mid Term Evaluation report of the ACCCRN includes this aspect as one of its key findings and talking about the ACCCRN across 4 countries, it notes,

Much of what is evident as ACCCRN activity in the 10 ACCCRN cities is closer to disaster risk reduction (DRR) than climate change resilience (CCR). Even though those with a solid UCCR grounding can identify CCR elements in the projects, city partners view them much more through a DRR lens, (Barr 2011: 16).

Just as the theorists reviewed in section 3.1.5, the point that evaluators try to make through the report is that many of the interventions do not take long time horizons into account and are far too much focused on current problems (ibid). The evaluators note that the CCR involves, “higher degrees of uncertainty...and probably, longer time spans,” (ibid: 34). Also, through the observation that “...there is a need for a macro view that considers matters at city and higher levels,” the evaluators also argue, that for activities to be considered as contributing to building resilience, there would be a need for moving beyond only local scales of Governance with which ACCCRN activities currently seem to predominantly engage (ibid: 26). Similarly, in an interview with the researcher, a member of the evaluation team said,

One of our findings was that most of what has been done in phase 2 for pilot projects we would see as DRR projects...all across the board they <the implementing partners> think closer to DRR than they do to urban climate change resilience<sup>42</sup>.

In section 3.1.5 it was also seen that that disaster risk reduction activities are mostly focused on tackling specific disturbances. The projects in Gorakhpur and Indore

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<sup>42</sup> 24-6-2011

(examined as part of this study) were similarly focused on tackling specific hydro-meteorological problems. In Gorakhpur, the ‘Ward Level Resilience’ project in Maheva Ward was explicitly geared towards engaging with the impacts of waterlogging or extended periods of flooding. The project concept (GEAG 2010:3) note, in ‘problem definition’ categorically states,

As the city faces water logging caused due to climatic (erratic rainfall and excess precipitation events), natural (topography and gradients) and improper development and the particular ward represents the situation of whole city...

Similarly, the Pilot Project on Conjunctive Water Management in Indore, is exclusively concerned with managing water scarcity in 4 neighbourhoods in the city. Commenting on how this engagement with specific risks from particular disturbances leads to actions under the ACCCRN resembling DRR interventions rather than resilience, the member of the evaluation team notes,

That <DRR> is a less complicated concept than urban climate change, it’s not so much about systems, it’s not so much about long term, and it’s more about planning for a predicted disaster rather than an unknown future. So I think it’s dealing with that uncertainty factor which these projects haven’t gotten into yet.<sup>43</sup>

Therefore, assumptions on dealing with an uncertain future embedded within resilience thinking (that spring from a theoretical base of non-equilibrium dynamics and accepting surprise/change) were starkly at odds with the explicit focus on specific current problems that prevailed in the policy context within which the ACCCRN unfolded. Thus, the dominant policy actors/institutions engaging with the ACCCRN project in these settings settled on the interventions resembling DRR activities. DRR provides effective entry points of action in these cities and the evaluation report (Barr 2011) notes that there is evidence to prove that DRR can transition into resilience. But in these policy contexts, the variance in the prevailing discourse and resilience thinking meant that there is no clear pathway for this transition to take place, “...the initiative is missing a roadmap that progresses interventions from a DRR orientation to the conceptually and organizationally more complex Urban Climate Change Resilience approach,” (Barr 2011: V). A member of the project team from the Rockefeller

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<sup>43</sup> 24-6-2011

Foundation mirrors this sentiment while admitting that the instillation of a ‘long term vision’ within the policy context has been a problem; she says,

...nearer term interventions is what we tend to get proposed a lot more...it’s more of your traditional disaster reduction type activities and so I think it’s been a little bit of a challenge to move beyond addressing the immediate needs to addressing the long term needs<sup>44</sup>.

#### 4.5 Conclusion

After having examined the discourses that accompanied the climate change resilience initiative, how these were perpetuated, the existing narratives they clashed with and the outcome of this dissonance, this final analytical section will aim to distil broad insights, inferences, lessons and findings.

One of the important lessons drawn from an analysis presented in this chapter is that policy contexts are not empty vessels into which new discourses with their accompanying agendas and attendant priorities can be un-problematically inserted. What this empirical research shows is that policy contexts have a proliferation of existing narratives each of which combine with interests/power in varied configurations. The climate change and resilience discourse was very new to the local policy contexts of Gorakhpur and Indore; and its accompanying narratives that emphasised hydro-meteorological problems, cross-sectoral collaboration and planning for the future clashed distinctly with prevailing discourses that emphasised a range of other problems (without an ostensible hydro-meteorological link), compartmentalised decision-making and planning for present risks/problems.

In section 3.2.1, it was seen how classical models of understanding policy change viewed the functioning of knowledge as quite straightforward. This generation of thinking gave primacy to knowledge, treating it mainly as a way of “...understanding the policy issue or problem; exploring possible options for resolving the problem; weighing up the costs and benefits of each option; making a rational choice about the best option; implementing the policy; evaluation,” (Wolmer 2006). The ‘Linear Model’ of policy processes, for instance, conceptualises policy-making as “a problem solving process which is rational, balanced, objective and analytical,” (Sutton 1999: 61); or the

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<sup>44</sup>10-6-2011

‘Incrementalist’ approach made famous by Lindbolm (1979) looks at policy-making as sum of logical steps, seem to consider the role of knowledge to be predominantly functional. It is thought of mainly as ‘information’ to be employed by policy actors to make sensible decisions in a policy process. The evidence presented above presents a far more nuanced view of the way in which knowledge, in the form of discourse, functions within the policy process. Far from being un-problematically integrated into a coherent decision making process, it contests existing ways of viewing problems and destabilises the status quo.

As such, this research adds empirical support to the newer generation of policy process models, those that seem to understand the dynamic, ‘knowledge-power-discourse’ nexus. Just as Keeley and Scoones (2003:37) note that knowledge is produced discursively, is employed by those with competing interests for their individual ends and that discourses are “cause and effect story lines that define a problem, explain how it comes about and show what needs to be done to avert disaster or bring about a happy ending,”; this research too has demonstrated the way in which discourses are perpetuated through subscribing to systems of power, the manner in which they compete with other discourses and how they present particular versions of reality.

This understanding of the importance of the functioning and nature of discourses in influencing the policy process leads to an improved appreciation of the investment of time needed to better analyse the nature and dynamics of discourses within a policy context. Part of the outcome of the clash between discourses inserted into the policy context by the climate change resilience initiative (discussed in section 4.4) could perhaps have been avoided if those conceptualising the ACCCRN understood the nature of prevailing discourses better. At the community level, this could have been through the adoption of a more robust form of participation that aimed at the genuine collation of priorities from the community; essentially, following the advice of the person from the project team in Gorakhpur charged with running participatory exercises who noted how the participatory exercises were designed with a pre-existing set of priorities whereas “...the next time around we should formulate these exercises keeping their <community> priorities in mind,”<sup>45</sup> (more detail on the problems in participation are

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<sup>45</sup> 25-4-2011

discussed in chapter 6 of this thesis). This is not to say that no outside information should be inserted into local setting and that community knowledge is all that is needed to build resilience. But what this does point towards is the critical importance of coupling exogenous discourses with endogenous priorities. Van Aalst et. al. (2008 170-173) underline the importance of this when they note,

...it is therefore possible to relate climate change information from 'outside' to the experience of the communities... people tend to be more concerned with everyday survival, and issues that directly affect their current or future livelihoods, rather than just the extreme hazards that organizations 'from outside' are concerned about... The challenge then is to form alliances with communities that help to connect the issues concerning livelihoods and everyday survival with the risks from extreme events.

Moving one notch of governance higher from the community level, perhaps it would have been easier to get the city administration on board if greater time and effort had been invested in understanding their ways of viewing problems and finding entry points within these. To a certain extent, this was already happening informally within various parts of the project: for instance, in Indore the team running the project found that as there had not been a great precedent for collaborative decision making between government bodies and civil society organisations, joint meetings stipulated as part of project protocol were becoming theatres of conflict. Therefore, to continue to garner the viewpoints of different individuals from varied parts of the city system (in keeping with the 'systems view' demanded by this resilience initiative), they started to hold meetings one-on-one with the antagonistic parties till such time the points of conflict were resolved. Over all, this is another argument for the devolution of agency to actors closer to the levels at which the project is being operationalised so that policies and projects are less dissonant with local narratives and more effective in achieving their intended purpose. Debates around this theme will be pursued in greater detail in the next chapter.

Section 3.1.3 looked at the gaps and critiques of resilience thinking and examined the lack of clear understanding of how the concept interacts with institutional/organisational environments (Garschagen 2013). The critics point out that there is a poor understanding of how the resilience concept, coalesced largely in western policy

and academic circles, is diffused across organisational environments with very different institutional arrangements and cultures (ibid). There is also a lack of clarity on how dense heuristics of Panarchy and Adaptive Cycle embedded within resilience can be translated into concrete guidance, how resilience can be measured and evaluated, and how the concept interacts with existing politics, norms, values, planning paradigms and regulative regimes within organisations (ibid). Also, while there are examples of organisations changing procedures, norms and regimes after disasters, there is scant evidence of ex-ante organisational change that goes hand in hand with resilience thinking (ibid). Specifically, for urban areas, there is a need for “...tools to bridge and put urban resilience analysis findings into urban planning, economy, and policy realms and practices” (Chelleri 2012:300). The evidence presented above speaks to this body of critique empirically. It was seen that the assumptions on governance and management introduced by the resilience discourse that accompanied the ACCCRN initiative was incongruent with the ‘norms, values and planning paradigms’ (the essential components of discourse) of the ULBs in the two cities. This is why, as discussed in section 4.4.2, there was an overall poor uptake of the key concepts by the Municipal Corporations of Gorakhpur and Indore. The explicit thrust on cross-sectoral collaboration and systems thinking was at odds with a discourse that stressed compartmentalised bureaucratic functioning; and the thrust on planning for an uncertain future through ex-ante organisational change was incongruous with the rootedness of the ULBs in present problems and crises. In essence, this chapter then provides empirical evidence to support this critique of resilience thinking; and points towards the need for those designing and executing climate change resilience initiatives to attempt a much more serious engagement with discourses and narratives in circulation within organisations that are critical for any system to manage disturbances successfully.

The urban contexts in countries such as India pose some unique challenges to a resilience initiative that comes with a heavy emphasis on cross-sectoral collaboration. Rural areas in India have a policy context that is compartmentalised to a much lesser degree than urban areas because most, if not all, development policies are routed through the civil servant known as the District Magistrate or District Collector. This official enjoys a wide remit and is charged with overseeing land assessment, land acquisition, taxes, duties, maintenance of law and order, disaster management, crises, rural development, banking, industries, transport and “...any other matter not within the

purview of any one department, and affecting the general welfare of the people of the district,” (Arora and Goyal 2011: 43). The nodal administrative official in urban areas is the Municipal Commissioner and has a remit that is also very wide, but unlike the rural areas there are a number of other agencies undertaking a diversity of governance functions. For instance, experts examining the state of urban governance in India have underlined the problematic role played by ‘Parastatal Agencies’ in urban areas (Mukhopadhyaya et. al. 2000). These are “semi-government organisations, companies or agencies owned or controlled wholly or partly by the government, which have their own governing boards,” and are not under the direct control of the Municipal Commissioner and the Urban Local Body (Chamaraj 2009). These semi-autonomous organisations sometimes are charged with important tasks that can have a critical impact on urban resilience. Mukhopadhyaya et. al. (2000) discuss the hindrances created by the one such organisation, the ‘Development Authority’ (both, Gorakhpur and Indore have one) to argue that crucial functions such as land use planning is in their remit, yet they are effectively beyond the control of the elected Urban Local Body. Therefore, in urban areas there is a proliferation of such agencies charged with overseeing different sectors and hence, the challenges for a discourse arguing for cross-sectoral collaboration is much greater.

This chapter has argued that with resilience came a number of new discourses with accompanying assumptions on management and governance that urged a break with the status quo; but the dynamics of urban governance in India also pose certain hindrances to this. The 74<sup>th</sup> amendment to the Indian constitution provides greater authority to Urban Local Bodies, providing State governments with a list of ‘mandatory’ as well as ‘discretionary’ powers that should be devolved to such bodies (such as Municipal Corporations) (Mukhopadhyaya et. al. 2000). Most state governments have acted on the minimum necessary, retained as much power as they could, leading to a severely fractured decentralisation process (Chamaraj 2009). Therefore, Urban Local Bodies continue to have limited agency in determining regime changes, alterations in protocols and substantial shifts in policy/strategy, Mukhopadhyaya et. al. (2000:24), write, “What constrains the local elected system is the powerful and omnipresent presence of the state government reinforced by the political party system. Both together suppress any local initiative.” A senior member of project team from the donor organisation cited the inadequate implementation of the 74<sup>th</sup> amendment as key hurdle for the ACCCRN.

Similarly, a key member of the project team from Gorakhpur also touched on this point when asked about the challenges that the ACCCRN faced; he spoke of the limited power of the city administration and argued for greater outreach to the state government as a pathway for affecting change at the city level. Mukhopadhyay and Revi (2012: 312) comment on this issue to note,

Another wicked problem is the problem is the relevance of local government. The 74<sup>th</sup> Amendment to the Indian Constitution places the tools traditionally used for moulding the city form-town planning-with the local government. But, not only have states not transferred this function to the city effectively, city form is also affected by broader economic policies, outside local control.

This resonates with Dodman and Satterthwaite's (2008) observation that the 'centralisation' of power at the national/provincial level is one of the impediments to successfully dealing with the impacts of climate change in developing countries and that these 'higher levels' of government play a potentially key role in reducing climate change vulnerability in urban areas. Martins and Ferreira (2011:45) make a similar observation when they note that local governments often face "...lack of autonomy and jurisdiction to take action in policies that affect climate change." A harmonious relationship between city and higher level levels of governance has been seen as essential to building resilience by a range of other theorists too (EU 2011, Leichenko 2011, Godschalk 2003, Mukhopadhyaya and Revi 2012). Therefore, the resilience initiative with its radically new discourses carried somewhat unrealistic expectations from cities afflicted with such substantial problems in urban governance.

## **5. Actors and Networks**

After examining the discourses that accompanied the resilience initiative and how these clashed with those already in circulation in the policy context, this chapter will begin by exploring the nature and dynamics of the actors and networks that helped propagate and circulate the discourses that accompanied the climate change and resilience initiative. It will then briefly examine countervailing and conflicting actors/networks in the policy setting before concluding with some insights on climate change, the policy process and urban issues. Keeley and Scoones (2003:38) note that ‘actors and their networks’ are critical to policy process and policy change is “...product of the agency of actors engaged in the policy process;” they are joined by a large number of theorists reviewed in section 3.2.2 (Ritzer 2004, Law 1992, Dolwick 2009) who also point out the way in which individuals or groups of individuals in a policy process can have a determining effect on it.

### **5.1 Actors and Networks in the ACCCRN- *an overview***

Starting from the international and going down to the local level, this section will provide a brief overview of the role played by selected key actors /networks in the ACCCRN initiative.

#### **5.1.1 International: The Rockefeller Foundation**

The ACCCRN was conceptualised, funded and managed at the international level by the Rockefeller Foundation. As such, the Foundation was the most influential actor in the project. Starting at the broadest level, the original concepts and ideas relating to the development of a global initiative aimed at tackling climate change resilience were the Rockefeller Foundation’s. It was also critical to selecting the cities that would receive funding and assistance as part of the ACCCRN to increase urban resilience; and along with a few key international partners such as the Institute for Social and Environmental Transition, also helped appoint local NGOs in each city that would be charged with running the project. The Foundation was responsible for leading a process to decide the specific resilience building actions that would take place at the city level. This was primarily done through the establishment of a protocol to be followed by NGOs in city in order to receive funding.

### 5.1.2 International/National: The Institute for Social and Environmental Transition

The Institute for Social and Environmental Transition (ISET) played a number of important functions in the ACCCRN that include, helping translate global discourse on climate change and resilience for those working at the local level, working as a means of donor oversight and helping in the definition/clarification of key issues. One of the key roles performed by ISET especially in the context of Gorakhpur was to ensure that the GEAG's official communication to the donor was packaged in way so as to be comprehensible and acceptable to them. For instance, their help to GEAG in preparing funding proposals for specific resilience building interventions was critical. Also, ISET, through international meetings and trainings in Gorakhpur was a key vehicle through which actors at the city level gained a better understanding of how to work with the concepts of climate change and resilience. While ISET was an international organisation that worked with the Rockefeller Foundation on a range of ACCCRN components, in India they operated as a National level actor too.

### 5.1.3 City level: The Gorakhpur Environmental Action Group and TARU

The Gorakhpur Environmental Action Group (GEAG) and TARU were chosen to lead the ACCCRN process in Gorakhpur and Indore respectively. Both organisations oversaw the intensive research phase that the donor stipulated under the ACCCRN. This entailed the production a number of different sector studies, a detailed 'vulnerability analysis' report and a city resilience strategy. The local partner organisations were charged with executing tangible projects that would build the resilience of the cities to which they were attached. This included both 'pilot projects' (such as one on solid waste management in Gorakhpur and another on water management in Indore) as well as larger and longer-term resilience building interventions. Also, a key step in the realisation of the vision of the ACCCRN initiative at the city level was a rigorous engagement with a wide variety of local level stakeholders. As the donor and other organisations engaged in the ACCCRN process were removed from the local policy context, it was GEAG and TARU who were charged with first studying the city system to understand who the critical actors were and developing pathways to engage them in project processes.

### 5.1.4 City level: Members of Urban Local Bodies

The budget allocated by the Rockefeller Foundation to the ACCCRN was far too small to actually build the resilience of vast urban populations. Therefore, the interventions

under the ACCCRN were meant to demonstrate ‘possibilities’ with the expectation that they would then be scaled up by the ULB or in the very least, their principles/findings would inform urban development policies. In Gorakhpur and Indore, the engagement of the ULBs was far less than what was envisaged. In Gorakhpur, initially there was engagement and interest from the ULB mainly because the GEAG reached out to select senior officials who understood the project and felt that it was vital for the city. Unfortunately after the transfer of this official there was a marked decline in the interest of the ULB towards the ACCCRN. In Indore, the situation was marginally better and the ULB had appointed one person to exclusively liaise with TARU who was running the project that extended a semblance of engagement and ownership by the ULB in the ACCCRN in the city.

#### 5.1.5 City Level: Experts, Prominent Citizens and the Private Sector

One of the many interesting facets of the ACCCRN initiative was its emphasis on the engagement with a wide array of actors at the city level. In Gorakhpur for instance the project reached out to hoteliers, lawyers, academics and other experts. In Indore there was involvement from architects, businessmen, technical experts and prominent civil society voices. As seen in the previous chapter, resilience came with a strong emphasis on systems thinking and complexity that was hinged on the idea of garnering multiple perspectives and knowledge from different parts of the city system; and this conceptual thrust was manifested tangibly in project processes through the involvement of a wide variety of actors at the city level. The engagement of these experts and eminent citizens with the resilience initiative substantially enhanced its legitimacy and claims to authority in the local policy context.

#### 5.1.6 Local Level: Community Members

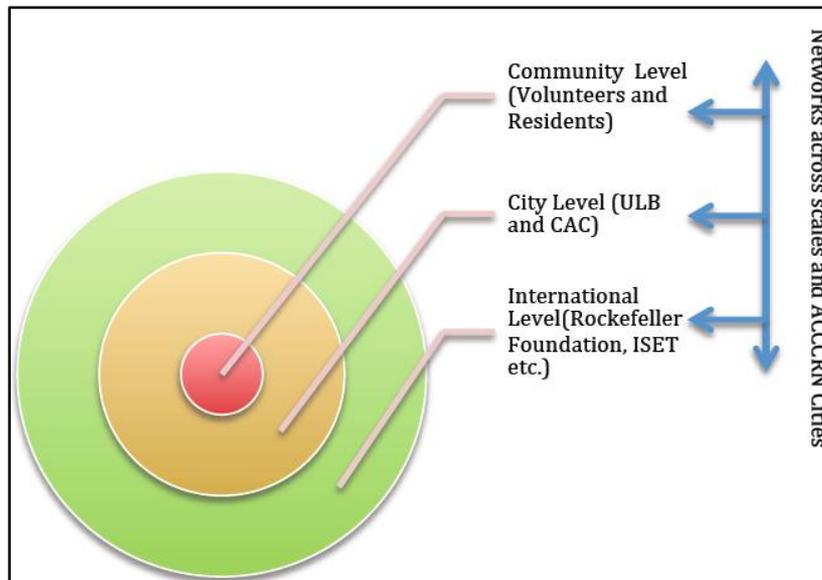
Residents of the neighbourhoods in which the ACCCRN unfolded were ostensibly thought of as important sources of information; and even though there were problems in the nature of their participation (discussed at length in Chapter 6), a number of steps were undertaken to solicit their views in informing plans of interventions unfolding as part of the ACCCRN in their neighbourhoods. In both cities of research, the communities were considered to be the ultimate beneficiaries of the resilience-building interventions being planned and undertaken. All this was to be done not by passively providing the community with the necessary resources but by ostensibly treating them as active participants in the initiative. Sourcing information from communities and then

working with them to achieve project objectives was only possible by using a cadre of volunteers and soliciting help from ‘community leaders’. These actors convinced others in their neighbourhood of the benefits that their participation in the ACCCRN would yield, they filled key gaps in information and convened community meetings that were essential to the progress of the project.

## 5.2 Analysing the Role of Actors and Networks in the ACCCRN

The previous section described the role played by the different actors engaged in policy processes associated with the ACCCRN. This section will analyse the manner in which they were influential and helped in the perpetuation and circulation of the key discourses discussed in chapter 4.

### 5.2.1 ‘Actor Networks’ in the ACCCRN



**Figure 11 Actor Networks in the ACCCRN**

As discussed in section 3.2.2, policy change is seen to result from “interactions between participants in the policy process,” (John 1998: 46). One such lens to study this interaction between

policy actors is Actor Network Theory

(ANT). A wide-ranging theory, this argues that actors enter into networked relationships with other actors and materials; and it is the network that defines their proclivity, agency and influence (Law 1992). Dolwick (2009:38) argues that,

...the capacity to act and matter and make a difference in the world—is seen to involve a vast assortment of actors. More specifically, it is interpreted as an interactive (or intra-active) performance that is spread out and extended through webs of materialised relations.

### *5.2.1a 'Actor Networks' at the Local Level*

Dolwick (2009:39) states that the social world is a sum of interactions and negotiations and in these no actor is strong or weak in themselves as "...strength comes from associations." Therefore, starting with the local level, it is seen how there was a move to form actor networks as a first step to ensuring that the ACCCRN and its accompanying discourses are embedded within the communities in which it works, here are a few key examples.

First, in order to make progress with the pilot project on solid waste management in Gorakhpur (see section 2.3.2 for more detail), the project team formed a 'Citizen's Committee' that would run and manage this initiative in the Purdilpur neighbourhood. Looked at through the lens of ANT, this was a network of local residents who understood, and shared the vision of the project team. As such, they also entered the larger network of actors participating in the ACCCRN project and then acted as 'nodes' for receiving and relaying arguments, ideas, information, values and knowledge (or discourse) circulating as part of this resilience initiative.

Second, one of the first actions that the project team undertook in Maheva, Gorakhpur was to consolidate a cadre of volunteers from the neighbourhood and win the support of local authority figures or community leaders. These actors then became part of the larger network of the project and started to act as the recipients and disseminators of key discourses on climate change and resilience espoused by the ACCCRN. For instance, talking about how they were included in the project to help perpetuate certain discourses, a volunteer talks about his role vis-a-vis the other residents of the neighbourhood and says, "...we have to explain the problems associated with climate change;<sup>46</sup>" similarly, most volunteers spoke of how their goal was to 'raise awareness' of issues around climate change and resilience. These policy actors who were included in the 'actor networks' of the project were then charged with adding members to these very same networks in order to ensure that the project, its accompanying discourse and corresponding priorities were entrenched at the community level. Almost every group of volunteers on being asked about their role in the project alluded to the way in which they were to link other residents to the structures/institutions part of the ACCCRN

(thereby increasing the strength of its actor-networks), in this case the GEAG- the local NGO running the project in the city,

Volunteer 1- We are links that join people to the organisation<sup>47</sup>.

Volunteer 2- I think our role is to get people together<sup>48</sup>.

Volunteer 3- We have to act as a link to get the community closer to the institution<sup>49</sup>.

Looked at through the lens of ANT, this ‘linking’ of community members to the ACCCRN by volunteers, in turn, made it more ‘powerful’ because this theory argues that “...power is persuasion, “measured” via the number of entities networked. Power is generated in a relational and distributed manner,” (Ritzer 2004: 2).

### *5.2.1b ‘Actor networks’ at the City Level*

Ritzer (2004:1) argues that the ‘will’ or ‘volition’ of actors comes from their “...networked associations, which in turn define them, name them, and provide them with substance, action, intention, and subjectivity.” Therefore, just as the consolidation of a volunteer base and citizens’ forums were a demonstration of the manner in which the resilience initiative sought to extend networks at the local level, a similar phenomenon was also witnessed with actors operating at the city level. First, a key strategy of the ACCCRN to gain traction within cities entailed the inclusion of important functionaries of the Urban Local Body into the actor networks it was establishing. A member of the project team from the donor organisation says,

...there is a stipulation that the process to date needs to have local government involvement in order to gain traction, so we don’t have any cities where local government isn’t involved at all<sup>50</sup>.

Through the inclusion of ULBs in networked relationships with other actors involved in the ACCCRN such as GEAG, the initiative hoped to immerse key officials in “...its own frame of reference, its own definition of growth, of referring, of framing, of explaining,” (Latour 1996:11). These officials have the power to grant varied permissions necessary for project progress, insert the tenets of resilience into long-term urban development plans and provide a detailed understanding of how the city systems

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work; therefore, their presence would strengthen the resilience initiative and the durability of its accompanying discourses.

Second, while members of ULBs resisted joining actor networks in the ACCCRN, the initiative was considerably more successful with the inclusion of prominent citizens of the city within these. Just as Keeley and Scoones (2003:34) argue "...those wanting to build arguments must, therefore, involve others in their project;" the ACCCRN solicited the participation of eminent local actors into the networks it was seeking to establish within the cities. As seen earlier in the chapter, in Gorakhpur for instance, the project reached out to hoteliers, lawyers, academics and individuals from a range of government agencies. In Indore there was involvement from architects, businessmen, technical experts and prominent civil society voices. To cement their place in networked relationships and help in the perpetuation of certain discourses, the resilience initiative sought to include these individuals in its frame of values through material technologies such as Shared Learning Dialogues (ISET 2009) (an iterative, participatory discussion format explained in greater detail in section 6.4).

### *5.2.1c 'Actor Networks' Across Scales*

Keeley and Scoones (1999) use ANT to understand policy change and argue that arguments employed in policy making processes are deemed to be 'knowledge', 'evidence' or 'scientific' as a result of the networks that put them forth. Latour (2005: 141) mirrors this point when he says that actor networks make their own "...frames, their own theories, their own contexts, their own metaphysics, even their own ontologies." Theories and evidence to be used in the policy process are created, become powerful or gain supremacy through a collective process (Keeley and Scoones 2003); they are then transmitted and deployed through actor networks. Therefore it becomes important to understand that the actor networks established at the local and city levels (the primary levels of research for this study) were a part of larger transnational networks operating across scales. This was primarily because the ACCCRN initiative was conceived of as a giant network of cities working with key discourses on climate change resilience -- hence the 'network' in the Asian Cities Climate Change Resilience Network(See figure on previous page<sup>51</sup>). This is reflected in official plans too as the

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<sup>51</sup> Extracted from Barr (2011)

intended ‘outcome 2’ of the project is the development of a “Network for knowledge, learning and engagement,” (Barr 2011: 35). Just as the inclusion of volunteers and community members (at the local level) and officials of ULBs and prominent citizens (at the city level) was intended for the consolidation of shared values that would allow discourses accompanying the resilience initiative to be perpetuated within particular urban policy contexts, the development of this transnational network of cities working with the climate change and resilience agenda would provide a fillip to the urban resilience discourse at a global scale. Though this aspect of the ACCCRN was clearly put in place for ‘sharing practical knowledge’, ‘deepening the quality of awareness’ and improving the ‘engagement’ of cities with key aspects of the ACCCRN, the Mid Term Evaluation report of the ACCCRN includes a word of caution (ibid). The report picks up on the self-referencing and mutual reinforcement of shared values that are the hallmarks of actor networks (Ritzer 2004), and notes the possibility that “...the cities become more internally facing towards the network...The network essentially becomes a club,” (Barr: 36).

Therefore, just as a number of theorists (Keeley and Scoones 2003, Ritzer 2004, Dolwick 2009, John 1998) note, having access to strong networks allows theories deployed in policy process to achieve dominance relative to other elements of the policy discourse. Thus, the consolidation of actor networks from the local to the global within the ACCCRN is reflective of its implicit ambition to expand the current policy discourse on dealing with climate impacts to include greater focus on the principles of resilience thinking.

### 5.2.2 Epistemic Communities in the ACCCRN

Another form of network that had a critical bearing on the policy processes associated with this resilience initiative was the ‘epistemic community’. As discussed in section 3.2.2. Haas (1992:3) defines these as “...a network of professionals with recognised expertise and competence in a particular domain and an authoritative claim to policy-relevant knowledge within that domain or issue area.” The functioning of these communities was evidenced at two different levels within the ACCCRN.

#### *5.2.2a Epistemic Communities at the Global Level*

At the global level, the Rockefeller Foundation along with ISET and a handful of other global actors such as ARUP (a global consulting firm) attempted to consolidate an

epistemic community. Forging a network of this nature would then allow these actors to, within the context of the ACCCRN, “...produce, publicise and police knowledge,” as well as “communicate and distribute knowledge” that was deployed in the policy contexts across which it unfolded (Meyer and Hodgson 2010:7). There are a number of characteristics and functions of epistemic communities and this group of global actors reflected a number of these (see section 3.2.2 for more detail).

First, actors within epistemic communities have a shared set of beliefs and values (Adler and Haas 1992, Meyer and Hodgson 2010). There is evidence that the Rockefeller Foundation and ISET shared such a relationship. ISET and the Foundation were involved from the very beginning of the ACCCRN process in developing key concepts and defining the direction that the Foundation’s programme should take. From a conversation with a senior member of ISET it was clear that the Foundation heard about key functionalities at ISET in a positive light and found their epistemic standpoint to be congruent with their own vision of the direction ACCCRN should take. This is the reason that ISET and Rockefeller together have been instrumental in defining a range of critical issues that have had a bearing on the direction that the project has taken. For instance, it was this group of international actors that stipulated the use of the ‘Shared Learning Dialogue’-- a tool for participatory discussions that was exogenous to the local policy contexts and that was to be employed at all strategic points in the ACCCRN’s development within cities. Also, the stipulation that the ULBs were critical actors that must be involved in project processes came from them. Elucidating this point, is a member of the project from Gorakhpur who talks about an international meeting convened by these actors and says,

The major player is the Municipal Corporation, this was made clear in the meeting itself... the emphasis was on having government people in the steering group which was a challenge...it was very difficult<sup>52</sup>.

These stipulations nudged the resilience initiative in a direction that this community of international actors thought was optimal.

Second, Haas (1992:3) tells us that epistemic communities “...have shared notions of validity, i.e. internally defined criteria for weighting and validating knowledge.” This

characteristic was embodied in the ACCCRN through the way in which funding decisions were made. According to project protocols, NGOs running the project at the city level such as GEAG had to prepare proposals for individual resilience building interventions that would be evaluated by the donor and other actors at the international level. On examining this process in a little more depth, it became apparent that these proposals were subject to a set of criteria that would determine their validity for receiving funds. Moreover, these evaluation parameters were developed mostly with the participation of this community of international actors that shared notions on what constitutes ‘resilience’ and what is congruent with this overall goal of the ACCCRN. Official project documents outline the manner in which ‘program partners’ were given a chance to feed into the process for the development of criterion but a member of the project team from the donor organisation involved in developing these criterion speaks of the funding process to talk about how actors at the city level (who were to execute these resilience building interventions) were largely excluded from this process of consolidating the funding parameters; he says,

...the cities have to submit an initial concept note that explains how the suggested project meets the gateway criterion... we developed these criteria in collaboration with ARUP but we also shared these (for feedback) with our advisory board members and from country coordinators <such as ISET>.<sup>53</sup>

Third, not only do epistemic communities produce, disseminate, and control knowledge, they also have a hand in ascertaining those who will in turn be considered to be ‘knowledge shapers’ (Meyer and Hodgson 2010). This group of international actors performed this role too in a number of ways. Taking one example, NGOs who were running the projects at the city level were charged with generating (through sector studies, vulnerability analyses, resilience strategies etc.) and disseminating (through, for instance, Shared Learning Dialogues) knowledge on climate change and resilience for policy actors (such as ULBs). As such, they were ‘knowledge shapers’ of the local policy contexts in which they operated (ibid). It was the same community of international actors that were directly responsible for bestowing this status and its attendant influence on certain organisations- GEAG was one such actor. In the preliminary stages of the project the Foundation commissioned at least two independent

analyses (one by Stratus Consulting (2007) and another by the Institute of Development Studies (Tanner et al. 2009)) of the cities that should be selected for becoming theatres of the ACCCRN. Neither of these two found Gorakhpur (and consequently, GEAG) ideal for this but it still became one of the 10 ACCCRN cities. On asking a range of respondents to provide a reason for this, it emerged that the ISET had a long, positive working relationship with GEAG (see section 5.2.3 for more detail) and therefore together with the Rockefeller Foundation they ensured that Gorakhpur was selected. Commenting on this, a member of the team charged with evaluating the ACCCRN said, “Whatever the research may have shown, they would have ended up with Gorakhpur anyway because they were angling it that way”<sup>54</sup>.

Therefore, through their influence on stipulating project protocols that pushed the project in particular directions; their parameters for including certain initiatives as valid resilience building initiatives and excluding others; and their choice in selecting the theatres in which the resilience initiative would unfold, this epistemic community of international actors had a critical influence on the ACCCRN. In essence, this community was an important vehicle for the movement of the exogenous discourses outlined in the previous chapter into local policy contexts.

#### *5.2.2b Epistemic Communities at the City Level*

Just as there was an epistemic community within the ACCCRN at the global level, there was another set of actors at the city level who too started to embody many of the characteristics of this type of network. Section 5.1 described the role played by the Gorakhpur Environmental Action Group, TARU and local experts within cities. The entry of the ACCCRN into the local policy context led these actors to organise into a network that started to resemble an epistemic community in a number of ways.

First, epistemic communities are networks of actors that generate ideas and create knowledge (Kelly 2012, Haas 1992). They have “shared causal beliefs” and “...a shared repertoire of communal resources – language, routines, sensibilities...etc.,” (Meyer and Hodgson 2010: 3-4). The protocols of the ACCCRN stipulated a rigorous phase of research within which actors at the city level were to generate a substantial amount knowledge and understanding about the manner in which climate change

impacted different parts of the city system. As the breadth of research required was too vast for a single organisation to undertake, a number of different local experts came together with the NGO charged with running the ACCCRN as part of a City Advisory Committee (CAC). This was a body of local experts and informed citizens with a common purpose that was to steer the ACCCRN at the city level by providing technical input, suggesting resilience-building interventions, reviewing plans and ratifying/amending the direction that the project was to take. Through the preparation of sector studies (analyses of how different urban sectors engaged with climate impacts), a vulnerability assessment for the city and the city resilience strategy, this community of experts was responsible for the creation of a vast amount of knowledge on climate change and its impact on Gorakhpur and Indore. On asking a range of respondents to name the main achievements of the ACCCRN, they invariably listed the generation and dissemination of knowledge on climate change. Answering this question, a member of the team charged with evaluating project said,

Having a set of partners across a broad part of the city with different major stakeholders and undertaking vulnerability assessments and doing sector studies and ending up with a city resilience strategy that is a published document ...I think that is reflective of an actual learning process<sup>55</sup>.

Even though the research products of this community were varied and for instance, ranged from studying geo-hydrological dynamics of Gorakhpur (Verma 2009) to the state of particular water bodies in the city (Mitra 2009) they sprung from the same “shared causal belief” in the negative impact of global climate change on city systems and vulnerable urban populations (Meyer and Hodgson 2010: 3-4). For instance, the sectoral study that discusses the state of “Ramgarh Tal’ a local water body in Gorakhpur notes,

The paper argues that to enhance Gorakhpur’s resilience to climate change impacts, the lake has to be protected and rejuvenated through measures that include proper treatment of effluents (sewage) and solid waste management. (Mitra 2009:1).

Second, apart from the generation of knowledge with a shared purpose, another characteristic of epistemic communities is their contribution to affecting policy change. Haas (1992) says,

Members of epistemic communities not only hold in common a set of principled and causal beliefs but also have shared notions of validity and a shared policy enterprise, (ibid: 16).

Zito (2001) echoes the same idea when he notes that epistemic communities share “...political values concerning the knowledge’s policy implications and what policy choices should be preferred,” (ibid: 466). Similarly, the group of experts with the designated NGO that together formed the CAC was focussed on contributing their knowledge to the policy processes in the local policy context. NGOs, such as GEAG charged with running the project at the city level were to suggest interventions that would contribute to the resilience of the city, to the donor for funding. These suggestions were to be derived from the research undertaken by the group of local experts and also have their stamp of approval on them. Moreover, these resilience interventions were to act as small demonstration projects that would catalyse changes in diverse urban policies. Therefore, groups of experts and NGOs at the city level were not only engaged in research but also focussed on applying this research towards a “shared policy enterprise” and on influencing “policy choices that should be preferred” (Haas 1992: 16, Zito 2001: 466). As such they assumed their role as epistemic communities in the local policy context.

Therefore, epistemic communities that coalesced at the city level contributed new knowledge on climate change and its impact on the city; they then helped deploy this knowledge to affect policy change.

### 5.2.3 Knowledge Intermediaries in the ACCCRN

After considering the role of networks in helping perpetuate the discourses outlined in the first chapter, this section will review the contribution of ‘knowledge intermediaries’ to the same (see section 3.2.2 for detailed explanation of the role of actors and networks in policy processes). As it will be observed, the Institute of Social and Environmental Transition (ISET) played this role in the ACCCRN.

### *5.2.3a Linking Policy Actors*

Sin (2008) outlines a few important characteristics of knowledge intermediaries and these included their role as ‘cross-pollinators’ or actors who link different actors to facilitate information flows. ISET played this role in the context of this research in a number of different ways. First, as seen earlier in this thesis they had a long track record of a positive working relationship with local organisations such as the GEAG. ISET and GEAG had worked together on a number of different occasions prior to the ACCCRN, the head of GEAG was on the board of ISET and there were close personal associations forged over many years of linked professional endeavours. The senior member of ISET touches upon this point and notes, “GEAG is a partner of ISET and always has been one from well before the ACCCRN project and on activities that are outside the ACCCRN project. Shiraz <head of GEAG> is on our board...”<sup>56</sup>

Second, the Rockefeller Foundation did not know or meet with local organisations such as GEAG directly but hired ISET as an advisor to the ACCCRN and accessed their professional networks to expand the group of actors participating in the ACCCRN. The head of ISET relates the manner in which the Rockefeller Foundation approached him initially as they had heard of him “... as a person that had some critical insights on adaptation and climate and who had been working across Asia and because of ISET’s reputation.”<sup>57</sup> Thus, as GEAG was part of ISET’s network and the Rockefeller Foundation sought out ISET to strengthen their initiative, the organisation acted as the essential link in this chain of actors. As such, ISET also started to act as an essential node that facilitated the flow of information between these actors; effectively “cross pollinating” ideas and knowledge between these organisations (Sin 2008).

### *5.2.3b Facilitating Communication Between Policy Actors*

Once ISET had forged important links between key actors within the ACCCRN, they helped facilitated communication between them. The previous chapter outlined a number of key discourses that were external to local policy contexts; ISET helped the concepts around climate change and resilience gain traction in local policy contexts by translating them so as to make them comprehensible to local level actors such as GEAG. A number of theorists have outlined this ‘translation’ role as one of the key

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functions of knowledge intermediaries; Sin (2008) says these actors are “translators and processors who interpret and adapt information. Jones (2009: 27) adds to this to note that the functions of knowledge intermediaries include “capacity building, lobbying, as well as knowledge translation and brokering” ISET helped fulfil this in a number of ways.

First, ISET provided ‘technical assistance’ and ‘capacity building’ to local organisations such as GEAG. This entailed explaining how concepts exogenous to cities apply to local contexts. Explaining this a member of the project team in Gorakhpur said that the donor did not deal with them directly and that “...they work through ISET who do technical coordination and management. The donor is only involved when there are crucial decisions to be made. ISET undertakes the role of communicating what the donor wants.”<sup>58</sup>

Through large international workshops and small ‘one on one’ training sessions, ISET introduced theoretically dense ideas around climate change and resilience to policy actors who had never before engaged with these. The researcher participated in and helped organise one such training in Gorakhpur. Here a number of key concepts were introduced to the staff of the GEAG as well as the volunteers. The main session, delivered by an ISET team member, attempted to explicate the constituent elements of resilience to the entire project team. The session provided fertile ground for analysis as the ‘exogenous’ nature of the resilience discourse was evident through the difficulty with translating its key tenets in Hindi (the language understood by the most of the project staff and volunteers). The ISET team member had to adopt innovative methods of ensuring that the key concepts were translated and assimilated. They did this by using a GEAG staff member who had a good command over Hindi and English as a translator and; by employing physical objects to demonstrate the various qualities embodied by the resilience concept. For instance, a rubber band was employed to demonstrate how resilience aims to build flexibility and a Swiss army knife was used to explain how building resilience is about providing a diversity of mechanisms to effectively deal with climate change induced disturbances!

Second, just as training and capacity building exercises are one platform employed by ISET for the translation of a global discourse on climate change resilience, the Shared Learning Dialogue is another such platform. These are,

...iterative, transparent, group discussions developed by ISET with local actors in communities, government agencies and specific organizations to bridge insights and understandings of climate change and resilience from multiple sources (ISET 2010a).

The use of SLDs accompanied the entry of ACCCRN and with it of ISET as an intermediary organisation in local policy contexts. A senior member of the project team in Gorakhpur explains this,

In March 2009, they, ISET, presented some initial concepts and the approaches on what the ACCCRN is-what are SLDs, how the SLDs will take place, what is the intervention and how urban systems work...and climate change impacts etc. all that was defined by ISET for Rockefeller.<sup>59</sup>

SLDs as a format are particularly well suited to be deployed in climate change resilience policy processes. This is because a successful policy process to build climate change resilience requires an engagement with diverse constituencies and SLDs are hinged on the idea of varied policy actors bringing forth their individual views (Osbaer 2007). Also, SLDs lend themselves particularly well to building resilience by addressing the ‘uncertainty’ inherent in climate change through their iterative nature; a respondent closely associated with project processes says,

...in other development projects there is more certainty on goals and impacts, the beginning and end points of the process are more defined, I’d say that that this isn’t so for climate change and so iterative processes are useful<sup>60</sup>.

Through the deployment of these iterative processes that involved a large cast of policy actors, ISET hoped to build ‘shared learning’ on a range of climate change and resilience issues. In this way SLDs provided an effective platform in which to insert key discourses and begin the process of their circulation in the policy process. Therefore SLDs took place at most strategic points in the project in Gorakhpur and became venues for the flow of ideas from international level policy actors and between actors at the city level.

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<sup>60</sup> 21-04-2011

In this way ISET also performs the ‘facilitation’ function that Woolfe (2006:14) considers integral to the role of knowledge intermediaries, this is when intermediaries, ...function as initiators of discussion, for example by creating networks and discussion forums, or by holding conferences and generating exchange visits. The intermediary role in this way transcends simply making interventions to deliver messages, and operates to ensure that there is dialogue between different parties.

Similarly, ISET linked diverse policy actors to create networks, organised forums such as SLDs that were forums of discussion and clearly went beyond merely conveying information from one party to another.

### *5.2.3c Interpreting and Adapting Knowledge*

Intermediaries in a policy process also act as ‘processors’ that interpret and adapt information prior to its presentation and ISET played this role too (Sin 2008). Explaining this point further Wolfe (2006:16) says that knowledge intermediaries, “...are concerned with how information is interpreted...the focus is on relationships with the users of their services as well as the content of information being communicated.” Section 5.1.2 described the manner in which ISET helped GEAG prepare project proposals for consideration by the donor. Even though an ISET team member described their contribution to this process in fairly functional terms and conceived of it merely as support or as he called it, “backstopping”<sup>61</sup>; their role in securing funding for GEAG was critical. Taking just one such episode of preparing draft proposals (or ‘concept notes’ as they were also called), it was seen that an ISET team member flew to Gorakhpur from Delhi to lead the proposal preparation process. Once in Gorakhpur he engaged in detailed discussion with the head of the organisation and his staff to understand what the organisation hoped to achieve. He then made a few quick visits to prospective field sites before beginning work on the proposal. For the writing process while he assigned the collation of data for particular sections of the proposal to different individuals, he acted as the conduit and coordinator. His role was to essentially take the idea for the intervention and relevant data from GEAG and process it in a way so as to be appealing to the donor.

This ‘processing’ could also be seen as an act of framing and entailed a number of different elements. First, he ensured the use of a particular idiom in the proposal that was compatible with an international lexicon of climate change and development that was shared by the donor too (for example, the strategic employment of the term ‘resilience’ instead of risk reduction/vulnerability reduction). Framing was also seen through the construction and insertion into the proposal of a theory of change that is congruent with the overall framing of the ACCCRN (for instance, by explaining how the proposed intervention adopts a ‘systems perspective’ that is integral to the tenets of resilience embedded within the ACCCRN). ISET’s contribution to the proposal also entailed a subjective assessment, based on interaction with the donor, of the types of actions that would be ‘appealing’ to them by keeping their wider priorities in context (e.g. building on the burgeoning field of practice aimed at strengthening peri-urban agriculture). Last, framing also entailed an alignment of the proposed idea with explicit (e.g. climate change resilience) and implicit (e.g. collaboration with Government agencies) conceptual pillars of the project process.

This act of framing and processing project proposals did not merely facilitate their approval by the donor organisation. Through this ISET effectively helped integrate components of exogenous discourses on climate change and resilience in key plans and processes of city level actors. By, for instance, weaving the tenets of resilience (such as systems thinking) into project proposals ISET was helping align project activities from their very conception to the values and priorities implicit in the broader discourses that accompanied the ACCCRN. Vogel et. al. (2007) argue that,

...within multi-directional exchanges and flows of information, intermediaries capture and interpret information, adapting it to the context, adding to it, packaging it, communicating it, and facilitating exchanges between groups, (ibid: 6).

ISET undertook these functions and through being privy to the manner in which the donor conceptualised key issues and working closely with GEAG. They helped mediate expectations, priorities, values as well as shape the tropes, expressions and discourses through which these were communicated. In this way, ISET helped package GEAG’s intended activities to try and ensure they were seamlessly inserted into the web of knowledge and action that together constituted the ACCCRN initiative.

#### 5.2.4 Policy Entrepreneurs in the ACCCRN

From the very beginning of the researcher's immersion in the field it became apparent that the momentum that discourses associated with the ACCCRN enjoy within Gorakhpur and Indore is due to the involvement of particular individuals or champions. This section will explore the role of these champions in helping circulate and perpetuate the discourses discussed in the first chapter, through this it will also highlight the important roles played by 'policy entrepreneurs' in a policy process. There were two main categories of champions- formal (government officials) and informal (volunteers and community leaders).

##### *5.2.4a Formal Champions as Policy Entrepreneurs*

Even though the role of ULBs in the ACCCRN was far less than originally anticipated, there were certain individuals from these organisations who helped the initiative gain the traction that it did in local policy contexts such as that of Gorakhpur and Indore.

The ACCCRN from its inception is a project that hopes to collaborate closely with the Government to deliver project outcomes and these champions acted as the link. In this role they resembled Robert and King's (1991) conception of public entrepreneurs- these,

...translate ideas into a more formal, explicit statement. Working with those who have the formal power and resource control. The public entrepreneur seeks acceptance of the innovative idea in law or executive fiat, and the eventual implementation of the innovative idea into practice. (ibid:152)

The importance accorded to these champions also resonates with Roberts (2008), who in her influential paper underlined the critical importance of 'political/administrative champions' to supporting city wide climate change adaptation in Durban, South Africa. Carmin et. al. (2012) also demonstrate the importance of a champion to initiating institutional change in the context of preparing for climate change.

Many of those interviewed readily identified the Municipal Commissioner of Gorakhpur as one such figure as in the initial phase of the project; he was very receptive to the key messages enshrined in the discourses accompanying the resilience initiative. Apart from recognising the project and participating in certain project processes, the Commissioner also helped embed these discourses in local governance by undertaking

certain formal policy measures based on input from the organisation steering the ACCCRN in Gorakhpur-GEAG. For instance, one of the early interventions to raise environmental awareness in Gorakhpur city was a people's vigil for the conservation of the City's main local water body-the Ramgharh Tal; based on input from GEAG, the Commissioner ordered the demolition of buildings that were encroaching on public land adjacent to the lake, agreed to commence dredging operations with the water body to increase its water retention capacity, protect bio-diversity and lobbied internally for funds to undertake a conservation programme. The discourse underlying this course of action was around planning for an uncertain future where climate change would exacerbate hydro-meteorological disasters such as waterlogging. Therefore the health of local water bodies into which the city's excess water drains is critical.

As discussed in section 4.1, knowledge on climate change and awareness of impacts is extremely low in Gorakhpur and Indore and a key discourse that accompanied the resilience initiative was one that argued for priority to be given to these. Certain individuals within government agencies also marked themselves as policy entrepreneurs by engaging with this discourse and by attempting to understand how this nebulous, global phenomenon interacts with some of their most pressing current problems (e.g. water logging in Gorakhpur and water scarcity in Indore) and then communicating this to relevant audiences. Commenting on this issue a senior member of the project team in the Rockefeller Foundation noted,

...where we've seen the best engagement and opportunity is where the smart people within the city, people who are really progressive and forward looking have taken this issue as an opportunity, not to work on something that is a low priority but actually to say this issue can help advance our current challenges while also preparing us better for the future<sup>62</sup>.

This is one of the defining features of 'policy entrepreneurs' according to Roberts and King (1991) who employ a case study of a shift in a particular education policy to demonstrate that one particular individual effectively communicated the new issue to relevant individuals and that 'dissemination' of information on policy issues is a critical component of generating the right environment for action. For example, in Indore, a city planner working with the Indore Municipal Corporation (IMC) was widely cited as

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62 23-09-2011

the champion or entrepreneur and here he used the convening power of the IMC to gather key individuals and together with other actors, helped provide momentum to a Pilot Project on Conjunctive Water Management in four neighbourhoods in the city – interpreting the global problem of climate change in a way that linked it to local and pressing issues of water scarcity in Indore. Importantly, this correlates to the ‘sense making’ activity of policy leaders, identified by Plowman et. al. (2007). Here the authors use a complexity lens to understand the role of leaders in emergent systems to argue that “sense making” was one of three activities undertaken by policy leaders- this is “...the process by which individuals ‘construct meaningful explanations for situations and their experiences within those situations’...” (ibid: 351). A member of the project team in Indore highlighted this role played by the policy entrepreneur and said in a public meeting, “...the city is starting to understand that climate change is not only about polar bears and melting glaciers but is a pressing issue linked to a number of different problems that the city faces”<sup>63</sup>.

#### *5.2.4b Informal Champions as Policy Entrepreneurs*

Unlike the members of the local administration, outreach to whom was a part of the design of the ACCCRN, informal champions (volunteers and community leaders as discussed in section 5.1.6) came into their role as policy entrepreneurs more serendipitously and attempted to perpetuate the discourses accompanying the ACCCRN in a few different ways.

First, they helped mediate trust. Community leaders and volunteers helped introduce discourses on climate change and resilience that were exogenous to the communities that it sought to engage with and helped initiate a process of ownership/engagement by the communities towards these. One such champion that the researcher encountered in Gorakhpur was a doctor working at the community level with a small clinic in the Maheva slum. He belonged to same caste group as most of the slum, the *Nishad* community and therefore had an established presence and social standing with the community. A member of the project team working at the community level said,

Doctor *sahib*<sir> has been practicing in this community for 15 to 16 years and when we wanted to start work in Maheva we contacted him first and requested

his support. He has been a great help in introducing us to the residents of the neighbourhood.

It was evident that the Doctor's 'support' was important because his word carried weight and there was an observable respect that he received from the community. Therefore his association with the project helped the discourses around climate change resilience gain some footing in this neighbourhood that had never before considered these issues. Steen and Groenewegen (2008) underline the importance of the 'social position' of policy entrepreneurs, they argue that these individuals need to "...be endowed with sufficient authority and legitimacy and have open and confidential links with the community involved," (ibid:18) -- all of which the doctor displayed. When asked about the importance of these champions in helping mediate trust, a member of the project team said,

Every time we want to do a project such as this, we need someone from the community to introduce us to the people as we are not from here...also these people enjoy this respect from the community because they have a deeper understanding of key issues...<sup>64</sup>

Perhaps the most tangible way in which the role of informal champions was evidenced was through their ability to convene community gatherings that were then employed for 'shared learning'. As it has been discussed in the previous section, platforms for shared learning provided an ideal mechanism for the insertion of discourses exogenous to local contexts. For example, in Indore, TARU was implementing a pilot resilience-building activity in the form of a Pilot Project on Conjunctive Water Management Project. A key component of this initiative was the organisation of 'water user groups'- platforms where local residents would convene to discuss issues of water scarcity in 4 localities. It is seen that the Secretaries of these water user groups were the main reason for the group coalescing. In the following exchange the researcher speaks to a member of the water user group-

Q- You have a very busy routine why are you engaged in this project?

A-I am involved because the secretary asked me to get involved, he is very aware and has a knack of working with people to solve problems...we have entrusted him with leading this. <sup>65</sup>

In Gorakhpur too, each of the six localities within the Maheva slum has two volunteers. As in section 5.1.6, these are usually young men and women from the locality and they are key to ensuring that the members of the community gather for knowledge sharing and decision making sessions. A number of different theorists have commented on this function of policy entrepreneurs; for instance, Robert and King (1991:170) argue that a key function that they discharge is to ensure compatibility, "compatibility is the degree to which an innovation is perceived to be consistent with the existing values, past experiences, and needs of the potential policy adopters,". Therefore, Secretaries in Indore and volunteers in Gorakhpur by bringing community members together to discuss the issue of climate change and resilience were helping make it relevant for the local context and paving the way for the discourses associated with it to be embedded at the local level.

### 5.3 Contests, Conflicts and Countervailing Actors/Networks

After looking at the contribution of different actors and networks in helping circulate and perpetuate the discourses associated with resilience initiative; it would be instructive look at the manner in which the operation and influence of these was contested and challenged in the local policy context.

#### 5.3.1 Existing Patron-Client Networks as Countervailing Forces

Existing patron-client networks in the local policy setting were a challenge to the actors/networks of the ACCCRN. Scott (1972) defines these relationships as,

...dyadic (two-person) ties involving a largely instrumental friendship in which an individual of higher socioeconomic status (patron) uses his own influence and re-sources to provide protection or benefits, or both, for a person of lower status (client) who, for his part, reciprocates by offering general support and assistance, (ibid:92).

Such ties were encountered at different points during the policy processes around the resilience initiative and came to the fore when the researcher was investigating the conspicuous absence of local politicians (also known as Municipal 'Corporators' or the *pradhan* or chief) from the policy processes associated with the ACCCRN. Here are a few noteworthy illustrations.

First, the existence of patron-client relationships was the significant reason for the negative attitude of the *pradhan* towards the ACCCRN in Indore's Mahalaxmi Nagar

neighbourhood-one of the four neighbourhoods in which the Pilot Project on Conjunctive Water Management (PPCWM) was being rolled out to help alleviate the problem of water scarcity. Local residents who were members of a ‘user group’ formed as part of the project said that he did not have any interest in solving the water issue, his engagement was limited to supplying mobile tankers of water to people who were seen to be his “near and dear ones<sup>66</sup>” (a colloquial reference to his ‘clients’). There was a high degree of agreement on how the maintenance of water scarcity (the exact opposite of the objectives of the PPCWM) was in the interest of the *pradhan* as this provided him with an effective bargaining chip with which to secure voter loyalty and election funds. This point was effectively covered by the residents of the locality in a conversation with the researcher, here is a short extract from a much longer conversation,

Researcher-What are the challenges that you have faced in implementing the Conjunctive Water Management Project?

Respondent 2- If we talk about the role of local councillors<corporators>, I see that it is in their interest that water scarcity in their neighbourhoods remains because, firstly it’s a source of income for them (they get kick-backs from the water tankers that are supplied when government supplies are interrupted); second, they get votes (as they are seen as the arbiters of who gets water)<sup>67</sup>.

Just as Hall (1974) notes, “The patron grants favours in return for goods, loyalty, political allegiance and other services from his dependent clients,” (ibid:2); it was observed that while the ACCCRN through its PPCWM aimed at making Mahalaxmi Nagar less vulnerable to water scarcity, powerful local actors had an interest in preserving the status quo as a route to retaining their clients.

Second, in Anjani Nagar, Indore (another neighbourhood where the PPCWM was being implemented) we see a different side of the operation of these networks of patronage. The members of the water user group were firmly in the camp of the incumbent corporator and therefore, did not feel the need for an external project that aimed to reduce water scarcity. In a focus group discussion, the residents of Anjani Nagar clearly indicated how supporting the corporator politically has yielded rich dividends. The fact of this exchange of political allegiance for services becomes evident in the

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following comment where the community outlines how support during election time is converted into practical gains afterwards,

Respondent 3- When it is election time, we help the corporator and the MLA <member of legislative assembly> and go around the colony requesting people to vote for him. We take out time and help him at this time, so then if our candidate wins, he helps us solve our problems for the next 5 years or so<sup>68</sup>.

From the meeting with the water user group in Anjani Nagar it was amply clear to the researcher that the community did not feel the need for an external project such as the CWMP as their political patron was providing them the services that they needed. The researcher asked them about how they felt that NGOs could help them to which they replied that they did not think that there was much for them to do. Abercrombie and Hill (1974) outline the manner in which patron-client networks are established “due to the inadequacy of formal institutional arrangements,” (ibid: 415). In Anjani Nagar there is clear evidence of the manner in which formal institutions had failed to provide the essential civic services that the local residents had to then secure by committing their allegiance to their local political leaders.

Thus, even as the resilience initiative was attempting to extend its networks to include residents and city politicians who are critical members of the local policy context, these existing networks between them resisted this process. In the case of Mahalaxmi Nagar, this led to the lack of participation from the *pradhan* who, through his support, could not only make it easier for the discourses on climate change, resilience and conjunctive water management to gain traction but expand and embed them in local development plans. In Anjani Nagar, the dominance of these networks led to reluctance from the community to work with the project team implementing the CWMP and engage with discourses that ACCCRN was hoping to insert in that context. As such, patron-client relations that are seen to influence “...the distribution of power, the flow of resources and the structure of social relations in society,” were one tangible countervailing force that interacted with the actors and networks attached to the ACCCRN (Eisenstadt and Roniger 1980: 48). As an aside, this point also extends existing understandings of the manner in which development projects (across sectors) tend to idolise the community; Cannon (2008:1) underlines the importance of communities to disaster preparedness but

also notes that “Communities are regarded as if they have qualities that somehow make them immune to the conflicts and antagonisms that permeate the rest of society.”<sup>69</sup>

### 5.3.2 Policy Entrepreneurs and Contests at the Community Level

As is evident from the preceding section, the ACCCRN was inserted into policy contexts that had numerous pre-existing actors and networks interacting in varying configurations; and certain steps taken for this resilience initiative to gain traction at the local level upset existing arrangements between these. While patron-client relationships were one type of pre-existing arrangement that was disturbed, the resilience initiative also shifted the position of certain actors in local webs of power. One poignant example of this was the manner in which informal champions assumed the role of policy entrepreneurs in the context of this global climate change resilience initiative; and as such threatened the dominance of local actors such as the ‘corporator’ in a number of ways. Here are two examples.

First, Berry and Berry (1999: 183) note that policy entrepreneurs are “...individuals who advocate policy ideas and are willing to devote their energies to pushing these ideas.” Similarly, in section 5.2.4b it was seen that informal champions (project volunteers and respected local residents) in their role as policy entrepreneurs helped spread awareness on climate change resilience issues and pushed these concepts amongst residents of neighbourhoods such as Maheva, Gorakhpur. As part of this they talked about a wide range of topics ranging from sanitation to agriculture as well as the role that ULB were to play in helping solving problems related to these. This process of increasing the awareness of the residents would result in increased demands and greater pressure on the Corporator (who was their representative in the Urban Local Body). Elucidating this point is a member of the project team who says,

Corporators are interested in making money and winning elections...they are worried that the awareness being generated through this project will lead to their constituents understanding the situation better and this will harm their electoral prospects<sup>70</sup>.

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<sup>69</sup> At another point he argues that “Communities are places where normal everyday inequality, exploitation, oppression and maliciousness are woven into the fabric of relationships,” (Cannon 2008: 12).

Second, Mintrom (1997:739) notes that policy entrepreneurs “...learn the worldviews of various members of the policy making community” this allows them to “determine what arguments will persuade others to support the policy idea.” To discharge this function informal champions helped convene large ‘community meetings’ where they discussed problems the community was facing with a view to finding solutions to a range of civic problems linked to hydro-meteorological issues. Before the commencement of the resilience initiative in the neighbourhood and the consolidation of this cadre of volunteers, the corporator was the main port of call for residents of Maheva facing such problems. On being asked to explain how the project was supplanting the corporator, the project team narrated an incident about a woman from the neighbourhood who was facing water problems and when she went to the Government Water Department, they asked her to privately purchase an expensive pipe to rectify the problem. Before she spent this money she checked with the project volunteers who reviewed the water distribution plans for the neighbourhood and asked her not to pay for the pipe herself as it would benefit a number of other households too. Therefore she went back to the department and continued to petition them. In the absence of the project and its volunteers the only possible source of such support and advice would be the corporator, thus a member of the project team working in Maheva says, “...the project is making him feel like it will reduce his need and importance<sup>71</sup>”.

Third, the volunteers also started to harm the corporator’s material interests. For instance, one of the problems in Maheva was the lack of adequate solid waste management and therefore, the ACCCRN through the volunteers sought to make new arrangements for the collection and disposal of garbage. These arrangements threatened the existing system that malfunctioned but was allegedly a source of kickbacks for the corporator. Explaining this a senior member of the project team says,

Corporators are also keen to run solid waste management projects but all that they are interested in is that how much money their ward will get and how much of this they can siphon off. So, this is not reported anywhere but these corporators are fearful that their vested interests will be harmed through projects like ours<sup>72</sup>.

Therefore even as policy entrepreneurs helped embed the discourses associated with the ACCCRN, a powerful policy actor at the local level was alienated. A number of people interviewed underlined how a positive working relationship with local politicians would benefit the project. A member of the project team in Gorakhpur said that the corporators could help put pressure on government agencies charged with providing essential services to Maheva. Also, he could help in obtaining government permission for undertaking myriad activities related to the project. He noted,

Just as the Mayor is the first citizen of the city, the Corporator is the first citizen of the ward or neighbourhood and she/he understands local issues well. Getting the corporators to understand the benefit that the project would yield could help us a lot, allow the project to function smoothly and help us achieve our objectives according to schedule.<sup>73</sup>

Extending this point, another respondent from Gorakhpur adds that the corporator has an intricate knowledge of the complex workings/bureaucratic procedures of the Municipal Corporation and other government agencies and they could employ this to ensure improved service delivery. He indicated that even though the project may make good progress in linking downwards, with the community, it would be very difficult to link in with important government agencies and their plans without the help of these local politicians. Illustrating this point, a member of project team working in Maheva says “If the corporator accompanied us to the Water Department and demanded to know why there were problems in the supply to Maheva, they would have to answer as he is a locally elected leader and has the ability to exert a lot of positive pressure on service providers.”<sup>74</sup> Another key respondent linked the involvement of the corporator to the sustainability of the project. He argued that even though the donor funded initiative would terminate after a specific number of years, the corporator would probably continue to wield influence for some time to come. Therefore, the corporator’s involvement could yield rich dividends in the long run. One member project team went to extent of saying that meeting the objectives of the project without adequate involvement of corporators would be challenging.

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<sup>74</sup> 01-08-2011

### 5.3.3 Conflict between Epistemic Communities

Apart from patron-client relationships and contests between policy entrepreneurs and local politicians, there were conflicts between the epistemic communities operating within the ACCCRN. Section 5.2.2 described the manner in which the epistemic communities operated at the global as well as at the local level of the ACCCRN. Even though the intention was to induce the formation of a transnational network of actors engaged in research on climate change and resilience, we see the development of conflicting view points between epistemic communities at these levels. Just as Haas (1992) argues, "...in cases in which scientific evidence is ambiguous and the experts themselves are split into contending factions, issues have tended to be resolved less on their technical merits than on their political ones," (ibid:11); we see political contests emerging between epistemic communities on the nature of resilience building options needed within local policy contexts. Here are two examples that illustrate this point.

First, Meyer and Hodgson (2010:2) note that "...epistemic communities produce knowledge as much as they set to influence politics," and the knowledge that they produce is aimed at providing solutions to specific problems. Similarly, the community of experts, prominent citizens and NGOs at the city level, through bodies such as the city advisory committee, were charged with undertaking research and recommending contextually relevant interventions that would help build the resilience of the city to climate change. These recommendations were then scrutinised based on the funding criterion (that had been largely established behind closed doors, see section 5.2.2a) and the subjective appraisal of a community of international actors led by the donor. What was seen to emerge from this process was a divergence of opinion between these two epistemic communities on the form that resilience should take. For instance, as a primary step towards increasing the resilience to climate change induced disturbances, the community of actors at the city level thought it prudent to raise awareness<sup>75</sup> of key climate change related issues amongst Gorakhpur's residents/policy makers and collect important climate change related data; and for this they proposed the formation of an information 'resource centre'. While this was an intervention that was proposed by actors with many years of work in the area, the community of actors at the international

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<sup>75</sup> Pelling (2011:388) in his article on urban disaster risk reduction in urban areas highlights the importance of "awareness-raising and training activities, including street theatre and school days." Similarly Prashar et. al. (2012) writing in the context of disaster risk reduction in Delhi also underline the critical importance of raising awareness as a means of reducing disaster risk.

level led by the donor felt that it was not suitable or appropriate in its existing form. On being asked about his views on how the problem of public apathy and the indifferent attitude of citizens towards issues of climate change and resilience could be remedied, a senior member of the project team in Gorakhpur said-

Mainly, through awareness drives, exhibitions, letters, campaigns. And we need to do all this more in a more structured way-we did not really do this to the extent that we should have...Actually we had proposed this but donors like to look at things from their own point of view; they should have seen the local needs of this area but the problem is that they are unable to see these-that is the problem<sup>76</sup>.

Second, this contest over the nature of resilience building between the two epistemic communities in the ACCCRN was indicative of what, according to those running the project within Gorakhpur, was a broader divergence of opinion between international actors and actors within the cities. As seen in section 3.1.5 actions to deal with the impacts of climate change can fall on a spectrum that range from engineering/technical/infrastructural solutions or those known as IPCC 'standard approaches' to softer approaches that IPCC calls 'vulnerability approaches' (IPCC AR4 2007). Members of the project team felt that the community of actors at the international level led by the donor tacitly favoured approaches that could be slotted in the former category whereas actors at the city level saw the critical importance of adopting the latter. On interviewing an important member of the project team in Gorakhpur, one of the reasons for the proposed resource centre being rejected was that it did not fit this preference of international actors for more 'technical' approaches to building resilience. On being asked if he thought that the donor tilted towards 'harder' engineering based solutions, he said,

*Respondent-* Yes, engineering and science based solutions...for instance, we had proposed the establishment of a resource centre, we still feel that this would have been the best thing to continuously steer the process and engage the public, influence politicians and government officials-this is how change happens slowly. We wanted to engage with the real issues for Gorakhpur. You cannot change the policies, unless you empower people...hard options can always be

implemented more easily but involving the public is a much more difficult path.

This did not fit the donor's criterion<sup>77</sup>.

This resonates with the observation by Dodman et. al . (2009) who argue that building resilience requires a variety of approaches of which the engineering/infrastructural approaches are perhaps the most straightforward. Lankao and Qin (2011: 145) also touch on the role of these 'softer approaches' by underlining the importance of tackling "...broader underlying socioeconomic and institutional factors," to tackling the inherent vulnerability of urban areas. Similarly, Rodriguez (2009:202) also discuss the importance of "...deeper structural inequalities that are often at the heart of entrenched vulnerabilities." Pelling (2011) goes a step further to outline that a heavy emphasis on technological solutions can be dangerous as city governments in the global south do not have the capacity to plan these appropriately as populations in these urban centres is expanding rapidly. This is also why the mid-term evaluation report of the ACCCRN also comments critically on city resilience strategies to note that they "...are strongly oriented towards physical planning," (Barr 2011: 24).

Third, another example of the difference in opinion between the epistemic community at the international level led by the donor and the epistemic community in Gorakhpur led by GEAG was their views on the degree to which ULBs were necessary for building the resilience of the city. As mentioned earlier, the former group considered the participation of ULBs necessary for the efficacy and sustainability of the initiative but interviews with key respondents revealed that actors immersed in the local policy context did not hold the same opinion. On being asked about whether he agreed that the sustainability of the initiative hinged on ULBs, a key member of the group of experts at the city level replied to say that he did not feel so at all and instead one of the primary pathways to ensuring sustainability, in his opinion, was creating demand amongst the people of the city for resilience building interventions.<sup>78</sup> Explaining the current emphasis on the participation of ULBs he said, "They <donor> told us that you will work with the Municipal Corporation<sup>79</sup>." In another interview, an actor closely involved with the project at the city level outlined the futility of attempting to engage the city government fully in the resilience initiative due to their ossified approach to

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governance, linear thinking, short term vision and compartmentalised decision making.<sup>80</sup> Another actor then underlined that this stipulation to engage ULBs to this degree came from policy actors operating at the international level, "...from the very beginning it was made clear to us that the participation of ULBs was of paramount importance<sup>81</sup>." Similar sentiments about the involvement of ULBs have been voiced by a variety of other policy actors who together formed the epistemic community at the city level.

Haas (1992) argues, "...despite the veneer of objectivity and value neutrality achieved by pointing to the input of scientists, policy issues remain highly political..." (ibid:11). Similarly, it was seen how even though there was 'expert involvement' and the stipulation of 'objective processes/protocols', there were differences in worldview and epistemic standpoints between policy actors engaged in the ACCCRN. As the next chapter will explore, within these conflicts the will of the community of actors at the international level prevailed due to the manner in which decision making spaces were constructed and through the deployment of certain material technologies. Importantly, the dominance of actors who were removed from the specificities of the local contexts in which the project was unfolding links back to the previous chapter; as it contributed to the dissonance between discourses carried by the ACCCRN and those that existed within local policy contexts. This dissonance then had numerous significant impacts such as scepticism from communities towards the resilience initiative, lack of participation from ULBs in project processes and interventions resembling DRR rather than 'resilience' (see section 4.4 for more detail).

#### 5.4 Conclusion

After having examined the manner in which actors/networks within the ACCCRN helped perpetuate discourses around climate change and resilience; and after scrutinising contests and conflicts between them, this final section will look at some broad findings and insights that the analysis above provides.

Primarily, the evidence presented in this chapter demonstrates how politics can have a determining influence on resilience building initiatives. As such, the analysis in this

chapter resonates strongly with the established body of critique that outlines the manner in which resilience has an inadequate conceptual engagement with issues of power and politics (see section 3.1.3b for more detail). First, Kuhlicke (2010) argues that resilience is sharply focussed on changing practices and policies without adequately acknowledging the inherent political complexity in issues of managing risk. We see that ACCCRN too suffers from this in a number of different ways. For instance, this chapter has argued that the manner in which certain residents of Maheva were recruited to embed the resilience initiative at the local level threatened and alienated existing actors such as the Corporator. Those driving the resilience initiative did not appropriate this understanding adequately and thus, the negative attitude of the Corporator then threatened the effectiveness and sustainability of the resilience initiative in turn. Extending this critique Turner (2008) notes the manner in which there also seems to be a lack of emphasis on how the concept is framed or interpreted differently by different people in a system. This facet too was visible in the ACCCRN in a number of different ways but most poignantly in the contest between epistemic communities that the initiative induced at the international level and those that came about at the city level. The preceding sections demonstrate the manner in which the epistemic community at the international level disagreed with certain proposed resilience building actions recommended by actors at the city level. International actors also stressed on a particular type of responses (those that leaned towards engineering/technical solutions) to build the resilience of cities that was in contrast to what city level actors considered optimal. Another charge levelled at resilience, is that of ‘incrementalism’. Through its sharp focus on the development of practices to manage change, resilience ignores transformative changes that may be needed to rout particular unsustainable structures (Leach 2008). This too was visible to a certain extent within the ACCCRN through its engagement with patron-client relationships. As seen in a preceding section, networks of patronage established in a neighbourhood in Indore were hinged on the continued vulnerability of local residents to problems of water scarcity. Despite this, the resilience initiative decided to not tackle these deep rooted, malignant political arrangements that were eroding resilience. Instead, it chose to remain focussed on the improved, conjunctive ‘management’ of water as a pathway to enhance the resilience of its residents.

Leading on from the critical importance of adequately understanding the politics of policy contexts; these findings also underline the manner in which processes of building resilience must also be processes of building consensus between diverse sets of actors and networks. For instance, it has already been observed that the alienation of corporators could have negative impacts on the durability and efficacy of the resilience initiative. Taking another example, it was observed that there were differences in resilience building interventions proposed by the community of experts within the cities chosen for the ACCCRN and those that operated at the international level. Due to their control over material technologies such as streams of funding, the will of epistemic communities at the international level prevailed in contests with city level actors (this theme will be explored in greater detail in the next chapter). The dominance of actors within the ACCCRN who were removed from the local policy contexts in which the initiative was unfolding exacerbated the dissonance between discourses attached to the resilience initiative and those that were already in prevalence. In essence, the actors at the city level were in a better place to ensure the smooth introduction of the resilience initiative within their local policy context; and therefore, building consensus by giving credence to their view of what resilience should entail could have helped avoid numerous obstacles that the project faced. For instance, the recommendation to enhance the knowledge and awareness of climate change and resilience within Gorakhpur through the formation of a resource centre, as a first step for the ACCCRN in the local policy context, could have paved the way for the tenets of the initiative being more easily accepted by citizens and policy makers (Pelling 2011 and Prasher et. al. 2012 both underline the importance of raising awareness). In this regard, the findings of this chapter also add to the case for involving those who are to benefit from resilience building policies more closely in their design and conception (Manyena 2006; Mayunga 2007; Ostrom 2009; Nelson et al. 2007; Dovers and Handmer 1992; Berkes 2007; Osbahr 2007, Norris et. al. 2008, CDRSS 2006).

Closely related to the points above, through its inherent link with systems thinking and a complexity view, resilience urges the collation of viewpoints from diverse parts of the system (Folke 2006; Holling 1973; Resilience Alliance 2002; Carpenter et al., 2001, Walker and Salt 2006). Therefore, those designing resilience policies must prepare for an enhanced array of actors who would usually not be involved in decision making

around civic issues to be engaged in policy processes around this issue. A senior member of the project team from the Rockefeller Foundation says,

I've been working in development for twenty years and I have never seen a situation where we have seen such a mobilized Chamber of Commerce on a long term strategic issue ... they are finding an opportunity to engage in the process that is cutting across sectors, cutting across a spectrum of actors ... there are other examples of participation from government actors who normally are marginal to these processes, for instance, technical people from the Department of Meteorology, Urban Planners, architects and the School of Engineering.<sup>82</sup>

Overall, due to the novelty and complexity of the climate change problem, solutions to it can only be found through the interaction of different individuals, ideas and the collaboration of different knowledge systems. The participation of more policy actors from diverse epistemic backgrounds then leads to the enhanced possibility of contests and conflicts within the policy processes; this in turn needs to be accommodated into the design of policies to build climate change resilience.

Apart from insights into the dynamics of building policies around the issue of resilience, the analysis in this chapter also outlines the manner in which individuals, their interests and their relationships are a critical influence on the policy process. Keeley and Scoones (1999:29) reflect on the degree to which the 'individual' and her/his 'agency' is important in a policy process to conclude that "...real choices are made and these make a difference in terms of what knowledge and policy becomes influential." A number of findings discussed in this chapter would support this claim. Key actors who drove the resilience initiative forward were selected due to their relationships with other powerful actors engaged in the policy process. Organisations such as GEAG who were driving the project forward in local policy contexts became key policy actors due to the pre-existing, positive working relationships that people within it had with individuals in other powerful organisations such as ISET. ISET itself came to be linked to the ACCCRN due to the professional relationships of people within it with networks that were close to the Rockefeller Foundation. Moving closer to the level at which the policy was implemented, it was seen how even though ULBs were reluctant to participate, certain individual champions such as the Commissioner who had a strong

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<sup>82</sup>11-03-2011

relationship with GEAG helped link ACCCRN with Government machinery in Gorakhpur. Also, on being asked about their reasons for participating in the ACCCRN, volunteers (important policy actors who helped embed the ACCCRN amongst vulnerable communities) revealed a variety of very personal reasons that included their relationships with others who were involved, wanting to physically improve their neighbourhood and gaining ‘work experience’ that would improve their prospects in the job market. Making a case for those designing and implementing resilience policies to engage with personal interests and relationships, a key member of the team evaluating the ACCCRN outlines how, in his opinion, those conceptualising the initiative thought about actors in “big blocks”<sup>83</sup> which wasn't always helpful, he notes,

What we do have is ‘individuals’ across different sorts of stakeholders- governments, civil society, private sector, academia etc. etc. who are interested and they get it.<sup>84</sup>

This finding does not contest the role of networks but highlights the need to view these as congregations of individual actors. After all, it is the interaction of actors within these networks that is key to their expansion, enrolment and ultimately their influence in the policy process (Keeley and Scoones 1999, Ritzer 2004, John 1998).

The findings in this chapter provide greater insight into resilience theory and the politics of policy processes but before concluding it would be useful to briefly examine what the material presented above tells us about the uniqueness of the ‘urban context’. Much of the research that has taken place on successfully responding to climate impacts has overlooked the specific challenges and opportunities thrown up by urban areas through their sharp focus on the rural (Dodman 2008). One such challenge is a clearer understanding of the manner in which ideas around climate change and resilience are diffused within urban areas. Cities benefit from a density of intellectual capital and it is urban areas rather than the rural space that is the site of innovation (Leichenko 2011). Therefore, due to the prevalence of expertise as well as the presence of universities and research centres, debate among local actors on climate change is likely to yield unique and innovative perspectives on dealing with its impacts. In comparison, rural areas that

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<sup>83</sup>24-06-2011

<sup>84</sup>24-06-2011

do not enjoy as vibrant an intellectual milieu would feasibly be more suggestible to exogenous ideas.

This is why, for instance, in Gorakhpur we see the epistemic community at the city level (composed of members of local civil society institutions, Universities and research centres) engaging in rigorous research and suggesting unique/innovative approaches to building resilience that were somewhat different from what global actors steering the initiative expected (see section 5.3.3). Therefore, these varying conceptualisations of resilience harboured by different epistemic communities led to political contests within the constellation of actors and networks participating in the policy processes of the ACCCRN. This also underlines the importance of the role of intermediary organisations in processes of building climate change resilience in urban areas. As it was seen in section 5.2.3, intermediary organisations played a number of important functions one of which was to achieve a degree of congruence in how actors at the city level and those operating at the international level understood key issues. Essentially, they were working to ensure that the individual and innovative ideas on building resilience that experts at the city level were developing through scientific inquiry and internal deliberations in bodies such as the CAC, matched the expectations of the donors and other actors charged with funding.

Overall, those spearheading climate change resilience initiatives must understand that forging networks for the effective diffusion of knowledge is far from being an unproblematic process in urban areas as there are prevailing epistemic cultures and existing intellectual enterprises (Cooke et. al. 2002). Thus, adequate space must be made in the policy process for the diverse ways in which local epistemic communities and individual experts process, shape and mould key ideas.

## 6. Policy Spaces

Within the social sciences, ‘spaces’ have a long history of exploration by theorists such as Bourdieu (1962, 1977), Giddens (1979, 1990, 1991), Sen (1999) and Spivak (1999) to name a few. This chapter however, restricts itself to an analysis of ‘policy spaces’ that are understood to be “...opportunities, moments and channels where citizens can act to potentially affect policies, discourses, decisions and relationships which affect their lives and interests,” (Gaventa 2005:11). From community meetings to international forums, the ACCCRN employed a number of policy spaces within which decisions regarding the initiative were made and a range of different project processes unfolded. These were the spaces where discourses (discussed in chapter 4) and different actors/networks (discussed in chapter 5) that carried them interacted, as such they were a key element that defined the nature of the resilience policy under study.

This chapter will attempt to understand the nature of the policy space, the types of power that were in operation and the manner in which different actors networks participated within them to deliver project outcomes. By no means is this an exhaustive description of every policy space in the ACCCRN but an analysis of a few key spaces that are linked with the themes explored in the previous chapters.

### 6.1 Policy Spaces in the ACCCRN

Starting from the local level and moving all the way to international level, this section will provide a comprehensive overview of key policy spaces, the subsequent sections will analyse their nature and dynamics.

#### 6.1.1 Local: Household Survey

One of the first opportunities for citizens of Maheva, Gorakhpur to influence the resilience initiative came in the form of a household survey. Designed as a representative sample survey, this was conducted with a thousand households across the neighbourhood and contained 123 questions. These were arranged in subheads that included basic information (name, address etc.), livelihoods (main occupation, income, expenditure etc.), use of electricity, educational background, sanitation and hygiene (solid waste management, toilets and waterlogging etc.) and health (diseases, infant mortality etc.). The survey was conducted by a cadre of 18 volunteers that the project team had recruited from within the local community; apart from helping with data gathering exercises, these volunteers were to help fill gaps in information, organise

community meetings, help design information and education campaigns and assist with numerous other tasks that would help the ACCCRN in Maheva, Gorakhpur achieve its objectives. Even though the survey was designed as a ‘one way’ flow of information from the community to those designing and running the ACCCRN in Maheva, it was to help consolidate the baseline understanding of the situation ‘on the ground’ and influence subsequent interactions between the community and resilience initiative- as such it ostensibly provided an important ‘opportunity’, ‘moment’ and ‘channel’ to the citizens of Maheva to contribute to the policy process (Gaventa 2005).

#### 6.1.2 Local: Community Meetings

The primary policy space at the local level was the ‘community meeting’. These were held at regular intervals between the team running the resilience initiative and the citizens of the areas in which the project was to operate. Mostly these were held individually in the six localities within Maheva on a piece of communal land that was ostensibly accessible to all members of the area. Attendance in these ranged from anywhere between 20 and 200 individuals. These meetings started formally after the survey was conducted and aimed to corroborate the findings of the survey, provide greater resolution to the data collected, solicit diverse opinions on a range of issues linked to the resilience of the neighbourhood, understand local hydro-meteorological issues, drainage patterns, gauge socio-economic dynamics of the local population and most importantly, inform decision making to propel the project forward. In Gorakhpur and Indore, these were run by locally based organisations.

#### 6.1.3 City: The City Advisory Committee

The ACCCRN was framed as an initiative that would involve a vast array of stakeholders at the city level (ISET 2009). To breathe life into this vision of expanded participation the project processes stipulated the formation of a ‘City Advisory Committee’- a body of experts representing different parts of the city convened by the main grantee NGO in the city (ibid). Both, GEAG in Gorakhpur and TARU in Indore consolidated such a group and invited members of the Municipal Corporation, the development authority, local businessmen, representatives of civil society groups, academics and meteorologists to participate. The CAC was to perform a variety of roles that included reviewing project processes, ratifying planned interventions, reviewing and critiquing key documents (such as the vulnerability analysis), filling gaps in information, using the position/networks/relationships of its members to help resolve

roadblocks and at times, act as a pressure group -overall, they were a panel to ‘steer’ the project at the city level (Barr 2011, Moench et. al. 2011). As many important policy decisions regarding the ACCCRN initiative were taken in the presence of the CAC-its meetings were an influential ‘policy space’ in the context of this research.

#### 6.1.4 City: Sector Studies

A defining characteristic of the ACCCRN was the heavy emphasis it laid on research as a precursor to action on the ground. In Gorakhpur and Indore, the grantee NGOs commissioned a large number of research studies to understand how various sectors within the city system interacted with the climate change problem. In Gorakhpur these included studies on the city’s geo-hydrological cycles, the state of its water bodies, solid waste management in the city, a review of the city’s master plan and use of plastics. In Indore, sector studies aimed to analyse the city’s energy systems, urban health scenario, transport and water security. These studies were commissioned from recognised local experts and helped inform the vulnerability assessments as well as the resilience strategy in each city. As such, these analyses were a critical part of the decision making processes within the ACCCRN and can be viewed as an influential ‘policy space’ through which the resilience initiative moved forward.

#### 6.1.5 International: Meetings and Workshops

While the ACCCRN entailed the opening up of diverse policy spaces at the city and local levels a number of key processes unfolded in international meetings and workshops convened by the Rockefeller Foundation along with a small constellation of international actors such as ISET and ARUP. From time to time large meetings were convened in one of the Asian countries where the ACCCRN was operational for a range of actors involved in running the initiative across the four countries. Those who attended included employees of grantee NGOs who were implementing the ACCCRN at the city and local levels, members of City Advisory Committees, representatives of ULBs who were collaborating with ACCCRN partners apart from representatives of the Rockefeller Foundation, ISET and ARUP. While the agenda varied from meeting to meeting, these international meetings were platforms where key theoretical concepts were introduced (e.g. resilience), the processes to be followed across all cities implementing the initiative were explained (e.g. using the ‘Shared Learning Dialogue’ methodology) and key protocols to be adhered to were laid out (e.g. parameters for city

level NGOs to receive funding from the donor). Therefore, these international meetings and workshops were a pivotal policy space in the context of the ACCCRN.

## 6.2 Dynamics of Policy Spaces

After a description of a few key policy spaces in the ACCCRN the sections that follow will analyse the nature and dynamics of these spaces. This section will aim to understand the functioning of these policy spaces using Gaventa's (2005) and Cornwall's (2002) treatise that understand policy spaces as either 'closed', 'invited' or 'claimed' and 'created'.

### 6.2.1 Invited Spaces

Invited policy-making spaces are those into which citizens/users/beneficiaries are invited to participate by governmental and non-governmental agencies (Gaventa 2005). Within these spaces the content of discussion is tightly regulated and the outcome is framed by the inviting parties in a way that is congruent with their agendas and interests (Cornwall 2002). Invited spaces were present in the ACCCRN at all levels and were the dominant form of policy spaces in the initiative. (Refer to section 3.2.3 for a more detailed theoretical exploration of policy spaces).

As seen in section, 6.1.1 one of first policy spaces in Maheva that provided the ordinary citizen with an opportunity for participation was the 'household survey'. The household survey falls into the category of 'invited' spaces in which the participation of citizens is solicited by powerful actors (Gaventa 2005). There are a number of reasons for this space to be categorised as such. First, it was a space that was explicitly created by the ACCCRN process to gain a deeper understanding of the situation in the informal settlement, as such it was not a space that had been 'claimed' by the people of Maheva through a popular movement or created through social/political agitation. External agents, in the form of the project team entered the neighbourhood, recruited volunteers and initiated the survey process. Second, as the subsequent sections will examine, there were strict limits to the nature of participation within this policy space but at the same time, through the very act of soliciting answers to a range of questions from the community that the initiative hoped to benefit, it was a space that was not completely 'closed' to citizen participation. Third, apart from not being a claimed or a closed space, the household survey was overtly an invited space because attempts had to be made to solicit people's participation within these. Volunteers described how they had to go

from door to door requesting participation, informing them about the ACCCRN and convincing them that their participation will yield benefit. Elucidating this point was a young volunteer who on being asked to describe the survey process said,

...we go to the residents and request people to agree to participate in the survey...we have to really explain to them that their participation in this process will lead to some improvement in the locality and in their lives<sup>85</sup>.

“Engaging vulnerable populations” is listed as a key feature of the ACCCRN initiative in official documents (ISET 2009:3)<sup>86</sup>; and interviews with those who helped devise the plans and processes of the ACCCRN reveals that creating spaces for community participation are a defining element of the project, for instance a key member of the project team from the donor says, “...from early on, my thinking was that this project should lie in the participatory development discourse.”<sup>87</sup> One of the most important such spaces for participation and community engagement were ‘community meetings’ (described in section 6.1.2). Just as with the household survey, these were spaces that were constructed and established by the team from GEAG running the project in Maheva and a demand for these did not arise endogenously; in fact, a number of respondents claimed that never before had the citizens of Maheva been asked to participate in this manner. Even though, as the following sections will explore, participation within these was fissured, they too cannot be called a closed policy space as citizens did contribute by providing information and helping the project team build a more complete picture of the lives and livelihoods of residents in Maheva. Also, Gaventa (2005) notes that bringing groups who have never before participated in policy processes into these invited spaces may require special skills and effort by those organising these meetings. Similarly, those organising the meetings had to struggle to firstly introduce the reason for these meetings and secondly, convince local residents with minimal or no understanding of climate change or resilience and no previous experience of coming together in such forums to participate. For example a volunteer on

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<sup>85</sup>25-2-2011

<sup>86</sup>Others too have noted the manner in which involving communities is key to reducing risk from hydro meteorological and other disasters, for example, Prasher et. al. 2012 writing in the context of disaster risk reduction initiatives in Delhi, India note the benefits of community engagement in urban planning processes.

<sup>87</sup> 04-4-2011

being asked about the problems he faced said, “...we had to repeatedly go and talk to people about attending, they did not want to come.”<sup>88</sup>

Just as the survey and the community meeting were examples of participatory spaces that the initiative established at the community level, the CAC was a critically important policy space at the city level. This too, subscribed to the category of being an invited space for a number of reasons. First, as seen earlier in this chapter in section 3.2.3, invited spaces are policy-making spaces into which citizens/users/beneficiaries are invited to participate by governmental and non-governmental agencies (Gaventa 2005). The CAC was quite clearly one such platform as its formulation was explicitly stipulated by the ACCCRN and a body like it did not exist within Gorakhpur or Indore prior to or in the absence of the ACCCRN. Participation within the CAC was tightly regulated with requests for participation being sent to particular individuals that the implementing organisations deemed important. It was clear that a number of its members shared close existing relationships with organisations running the project in the two cities. For instance, a senior lawyer associated with the CAC in Gorakhpur said that he had known the good work of the organisation and had a close relationship with the head of the organization and therefore, joined the committee; another member, a senior businessman also shared existing social/professional ties with members of GEAG. In this way, the grantee NGOs were very much the ‘gatekeepers’ who decided who participates and who does not in this policy space. In Indore, for example, discussions with a member of the project team revealed that certain groups that voiced strongly alternative opinions within the CAC created conflict and so had to be marginalised in the CAC. A member of project team in Indore says,

From the very beginning we were careful to ensure that the group gets along; there were a few people who were raising objections/creating problems and so we sidelined them.<sup>89</sup>

In this way, the CAC as an ‘invited space’ also embodies the problems Hickey and Mohan (2004) identify in their critique of participatory development. They note that some of these techniques aim to ‘manage’ development through institutional responses that depoliticise the practice of development “...rendering it a technocratic process to be

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<sup>88</sup>19-5-2011

<sup>89</sup>27-10-10

administered and planned for by agents of development rather than negotiated with and contested by its subjects,” (ibid:10).

Moving one level of governance higher, invited spaces existed at the international level too. The meetings and workshops (described in section 6.1.5) where a number of fundamental directions that the project was to take were decided, fit the mould of the invited space quite categorically. Cornwall (2002) argues that within this type of space there are ‘regularised’ relations as they are controlled and bound by the inviting party and participation within these spaces is highly regulated. She says, “...their purposes, mandate and remit tend to be circumscribed by the agendas of implementing agencies and are rarely, if ever, open to negotiation by citizens who are invited to take part in them,” (ibid: 18). These were spaces controlled by an empowered group of international actors who sought to handover new information, protocols and processes to those gathered for them to take back to the ACCCRN processes being rolled out in their own cities. Even though, on numerous occasions input from those who came to attend these meetings from Gorakhpur and Indore was sought, it was very much within the ambit of a fixed agenda and usually within the scope of a discussion that was shaped by those convening these platforms. In the subsequent sections of this chapter, it will be explored how many of the major characteristics of the ACCCRN took shape in these meetings.

### 6.2.2 Claimed Spaces

Cornwall (2002) and Gaventa (2005), who have written extensively on the dynamics of policy spaces, argue that they can embody different characteristics when viewed from different perspectives at different times. As this section will argue, this was true for the CAC as well because on the one hand, as demonstrated in the preceding section, it was clearly an ‘invited’ space but at times it was used to ‘claim’ or ‘create’ space as well.

As seen in section 3.2.3, these are spaces that are not typically open to citizen engagement but within which they find a place through pressurising policy-makers, lobbying or through social movements (IDS 2011). Through the participation of eminent citizens, the CAC hoped to become a body that would be given credence by policy makers in ULBs and other agencies charged with urban planning. This was because the funds invested by the Rockefeller Foundation, though substantial, from the

point of view of a privately-funded development project, were insufficient for achieving large scale change; therefore, the interventions that were part of the ACCCRN at the city level were meant to inform and influence a range of public policies being forged by various arms of the city government within Indore and Gorakhpur. Illustrating this point is a member of the project team from Rockefeller Foundation who says,

...we've certainly kept the thinking that if we look at urban climate change resilience at a city wide scale then we must engage with the government, we must look at how... because at one level you can call this an urban governance programme, it is about trying to change the way planning happens in the city<sup>90</sup>.

Even though section 4.4.2 describes the inadequate involvement of ULBs in the processes of the ACCCRN, the GEAG and the CAC in Gorakhpur did have some success in opening up policy spaces that were previously closed to outside voices and in inserting a discourse on climate change and resilience within these. The 'claiming' of such a space was evident through the Municipal Commissioner in Gorakhpur taking necessary steps to help conserve a local water body after outreach by the GEAG and the CAC (see section 5.2.4a for more detail). Similarly, the ACCCRN gained strength and credibility from the CAC that TARU help bring together in Indore. Though the participation of the ULB in the ACCCRN in Indore too was weak, some of the limited success that it had was partially through the use of the CAC to claim a space in the town's urban planning policy process. For instance, one of the most prominent architects and builders of Indore was on the CAC and because he was respected by urban planners and policy makers in the ULBs, access to key decision making processes became that much easier. On being asked about his relationship with a key, senior urban planner in Indore's Municipal Corporation he said that he knew him very well as they had "...done quite a lot of projects with him including the zonal plans for Indore."<sup>91</sup> Describing this, a senior member of the city's municipal corporation commented on the impact that TARU and its CAC in Indore had on the corporation to point out that now certain key officials were at least apprised of the interaction of the climate change problem with sectors such as water supply and waste management- leading to an understanding of how the ACCCRN had claimed a space, however small, in an urban policy landscape that had never before seriously considered the climate change

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<sup>90</sup> 11-10-2011

<sup>91</sup> 23-10-2011

problem. Therefore, even though the CAC was an ‘invited’ space, it was deployed to ‘claim’ a space in broader policy processes unfolding in the ACCCRN cities.

### 6.2.3 Closed Spaces

Gaventa (2005) described closed spaces as those where policy decisions are taken by a set of powerful actors behind closed doors, without the participation of citizens or those that the policy aims to impact. The direct participation of the most vulnerable citizens of Gorakhpur and Indore took place only in forums that were established at the community level such as the household survey and the community meetings. Spaces at the city level and especially those at the international level were by and large closed for the direct participation of those that the ACCCRN was attempting to ultimately benefit.

Apart from embodying the characteristics of invited and created spaces, CACs demonstrated certain characteristics of this type of policy space too. This was largely because the emphasis of the grantee NGOs while convening these spaces was very much on expert and elite involvement; as a result, vulnerable populations within cities who’s resilience the ACCCRN was focussed on building were not directly represented in these forums that were charged with moulding the project at the city level. Perspectives of the most vulnerable did enter these spaces but this was twice removed and was mainly through discussions on the results of data-gathering exercises conducted with communities to gauge their opinion on a range of predetermined issues. The mid-term evaluation report of the initiative echoes this argument to note,

...while the process is explicitly multi-stakeholder, it is primarily built around stakeholders from formal bodies – local government, NGOs, and private sector rather than community groups, (Barr 2011: 64).

The ‘Sector Studies’ (described in section 6.1.4) were another poignant example of an influential policy space that was closed to participation of the ordinary citizen of Gorakhpur and Indore. These studies were a critical component of the initial phase of the project and helped influence the directions that the project would take. For instance, a study of water security in Indore contributed to the delivery of a Pilot Project on Conjunctive Water Management and then later, a broader programme of enhancing the resilience of the city to climate induced water shortages. Similarly, a study of solid waste management (SWM) in Gorakhpur helped the GEAG understand this problem

better to undertake a pilot project on SWM and build in components of SWM within the program of action in Maheva. Despite the bearing that these studies had on the ACCCRN within Gorakhpur and Indore, they were exclusively expert led. A key member of the project team in Indore talks about these studies and says,

The sectoral studies have been entirely prepared by the specialists...They proposed the projects themselves as these are the ‘masters’ of these particular sectors<sup>92</sup>.

Similarly, the mid-term evaluation report of the initiative points out certain gaps in research outputs of the initiative to note,

...there were also gaps, such as sector studies missing the perspective of the most vulnerable (Barr 2011: 27).

International meetings and workshops were a key policy space within the ACCCRN into which participation was regulated by the Rockefeller Foundation and a few other empowered international organisations; invitations were extended to those who were involved in the implementation of the ACCCRN and those that the initiative ultimately hoped to benefit in Indore and Gorakhpur were largely excluded. Just as with the CAC, perspectives of the ‘community’ did however enter spaces but mainly through representatives chosen by the NGOs who were running the ACCCRN within Gorakhpur and Indore through a discussion on results of data gathering exercises such as surveys and participatory meetings. Hickey and Mohan (2004: 19) touch on this point in their critique of participatory development when they note, “...much of what is considered participatory is more a process whereby large numbers of people are represented by a small group of participants.” In moving through Maheva and the neighbourhoods in Indore it was evident that only very few residents understood that this initiative had a link to international organisations and that such spaces for meeting and discussing pathways of their resilience existed at the international level. When the question about the degree to which key policy spaces within the ACCCRN were open to ordinary citizens, a member of donor organisation engaged in the organisation of these international meetings and workshops replied,

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<sup>92</sup>19-10-2010

...my assessment is that we have realised our aspiration of having a really high level of engagement across the board...in terms of the poorest populations...I think it <the ACCCRN> has come up a bit shy on that regard.<sup>93</sup>

### 6.3 Power and Policy Spaces

This section employs the schema proposed by Lukes (1974), Veneklasen and Miller (2007) and Gaventa (2005) to understand the operation of power in policy spaces (see section 3.2.3 for more detail). In synthesising a number of theories of power they argue that it essentially has three faces-visible, hidden and invisible. This work builds on and resonates with the work of a number of other theorists (Hickey and Mohan 2004, Mosse 2001, Cleaver 2001, Cleaver 2004, Kothari 2001, Bebbington 2004).

#### 6.3.1 Hidden Power in Policy Spaces

It is evident that ‘hidden power’ understood to be exercised through agenda setting and tacitly limiting decision-making to a set of options selected by the powerful actor is implicit in the very structure of a household survey (as there is no room to deviate from the interview guide) (Gaventa 2005). This apart, a number of issues in the ‘performance’ of the survey provided a valuable insight into the functioning of this ‘second face’ of power within this policy space; here are two short examples. First, the researcher, while accompanying the surveyors noticed that a lot of anecdotal information being given by respondents was not captured due to the format of the household survey; as many times the interview guide demanded simple/yes or no answers to questions that elicited more complex responses. For example, one lady, on being asked if she was impacted by water-logging, explained how the height of the road outside her home was recently raised causing her house to flood. This vital piece of information, however, was not included from this exercise as the survey that was designed to collect information along established criterions did not accede any space to such deviations. This is reflected in the work of Cooke and Kothari (2001:8) who provide other examples of the constraints on the incorporation of community knowledge to note that at times participatory techniques lead to the “...acquisition and manipulation of a new ‘planning knowledge’ rather than the incorporation of ‘people’s knowledge by projects.” Second, a number of times a member of GEAG accompanying the surveyors had to translate questions that were phrased quite technically into local

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<sup>93</sup> 12-04-2011

parlance. While helpful, at times the translation acted as a ‘probe’ to elicit a particular kind of answer that the surveyors/GEAG team members considered ‘sensible’. For example, on being asked her opinion on the biggest problem in the neighbourhood a respondent said that it was the lack of a community hall when this question was phrased differently and asked again, the lady provided another answer with an explicit link to the water logging problem. This is in line with observations made by Mosse (2001:21), who in his extensive ethnography of the manner in which development is undertaken comments often on this aspect to note how participatory approaches at times “...serve to represent external interests as local needs, dominant interests as community concerns.”

Community meetings were also valuable theatres for observing the operation of hidden power (Gaventa 2005). Lukes (1974) also called this the ‘two-dimensional view’ of power and argued that this “...involves examining both decision-making and nondecision-making. A decision is a choice among alternative modes of action,” (Reason and Bradbury eds. 2009:39); a non-decision is “...a decision that results in suppression or thwarting of a latent or manifest challenge to the values or interests of the decision-maker,” (Lukes, 1974:46). The researcher attended almost all the initial participatory exercises held with the community in the 6 localities within Maheva, Gorakhpur and found that a number of people were repeatedly raising the lack of Government identification cards (that mediate access to social security schemes) and a number of women spoke of problems in accessing a pension due to widows from the Government; these issues were not adequately discussed and were set aside by those running the exercises. When asked about this, the person running the participatory exercises agreed and said,

Yes, that’s true; our main focus was on agriculture, sanitation and water-logging but they are keen that we discuss these other problems that they brought up but we keep setting these aside so it’s evident that there will be some disappointment.<sup>94</sup>

Similarly in a group discussion with volunteers, the researcher enquired whether they too felt that certain issues were side-lined and some were prioritised, and they agreed that issues around widow pension and identity cards were not discussed appropriately. Similarly, the issue of illicit alcohol (that has been discussed earlier) was excluded from

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<sup>94</sup> 25-4-2011

discussions. This was largely because even though these spaces were to ostensibly include a discussion on issues of importance to the community, they usually had a prefixed agenda that reflected the remit/objectives of the broader ACCCRN initiative, unfolding globally as well as certain issues that came to the fore through an analysis of results from the survey. Mosse (2001), in studying the functioning of participatory spaces, argues that it is much too simplistic to assume that ‘access’ to local perspectives will lead to participatory programme decisions, as there are a range of institutional barriers, that prevent this from happening<sup>95</sup>. He goes on to note that at times participatory spaces are where “...prevailing preconceptions are confirmed, options narrowed, information flows into a project restricted system that is increasingly controllable and closed,” (ibid:25). A member of the project team in Maheva illustrated this premise through a discussion on one component of the project that sought to instruct farming communities living on the periphery of Maheva in techniques of ‘flood resistant agriculture’ as a means of enhancing resilience to water-logging. She said,

We are going on about flood resistant cropping but in meeting with the farmers we learned that they are not interested because instead of wading in 4-5 feet of water and risking injury or death to implement these techniques that we are teaching them, they have access to alternate sources of livelihood for the period that their land is waterlogged...so yes, I do feel that we have not adequately taken their <the farming community’s> views on board...we think that water-logging is an impediment for these farmers but they don't think of it that way- they feel that this improves their land as when the flood waters recede, their land is replenished with nutrients...<sup>96</sup>

In examining the project ‘concept note’ that was prepared before any rigorous, extended programme of community participation took place in Maheva, it is seen that developing “resilient agriculture practices” was listed as a key method to enhance the resilience of Maheva ward, providing further evidence of how the agenda for these meetings was predetermined, and the limited agency that this policy space extended to those who participated in it. This is also indicative of a larger problem with ACCCRN, similar to many participatory development initiatives, it too sometimes overlooks the “non-project

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<sup>95</sup> Dodman and Mitlin (2011) make a very similar point when they argue that simply opening participatory spaces does not lead to deep participation from the community.

<sup>96</sup>01-08-2011

nature of people's lives," as well as "the complex livelihood interlinkages" in order to fit the broader aims of the 'project' being delivered (Cleaver 2001: 38). All this is not to say that water-logging did not exist as a problem in the neighbourhood; a number of respondents interviewed by the researcher as well as a participatory meeting held with key stakeholders from civil society organisations in Gorakhpur 18 months prior to starting work in Maheva identified it to be an important issue, but the marginalisation of other issues in favour of acceding primacy to this one problem is indicative of fissured participatory processes in the project. Looked at in another way, dealing with many of these endogenous priorities could also be seen as poverty-reduction measures and by sidestepping these in favour of those with an explicit hydro-meteorological link the project went against the understanding of the way in which many aspects of reducing urban poverty are congruent also lead to a reduction of vulnerability to climate change (Dodman and Satterthwaite 2008)<sup>97</sup>. Overall, this issue is reflective of the manner in which participatory techniques sometimes exclude knowledge not aligned with the central objectives of the project. For instance Cooke and Kothari (2001:12) reflect on this to note that, "...participatory research 'cleans up' local knowledge through mapping and codification, and marginalizes that which might challenge the status quo or is messy or unmanageable."

Looked at in another way, 'hidden power' operating at the community level prevented an optimum balance (between an exogenous emphasis on tackling climate impacts and a range of other endogenous priorities) essential for the success of community-based vulnerability reduction efforts (Van Aalst et. al. 2008). Van Aalst et. al. (ibid:169) acknowledge that owing to a lack of awareness of the increased dangers from global warming at the community level an understanding of climate change "...is something that is most likely to be "brought in" through the advocacy of the outside agency." Yet they go onto highlight that "...it is precisely the grounded response of people to their immediate needs and risks," that can effectively provide an entry point for reducing vulnerability (ibid: 170). Dodman and Mitlin (2011:16) voice a very similar sentiment when they note,

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<sup>97</sup> Dodman (2009:154) encapsulates this point succinctly when notes "...individuals who have access to adequate food, clean water, health care, and education will inevitably be better prepared to deal with a variety of shocks and stresses— including those arising from climate change."

Specific attention should be given to the interface between climate change priorities alongside other immediate development needs, and the heterogeneous needs within low-income households and neighbourhoods.

This ‘hidden power’ in community meetings was sometimes exercised through material technologies, as illustrated through the following examples. First, unlike traditional participatory exercises where those assembled are given substantial autonomy to add information, here the pen was mostly in the hand of the member of the project team designated to lead participatory exercises and a lot of power was vested in her to decide information that should be noted on the chart papers being used (which would then become a formal part of the decision-making processes in the ACCCRN). Often, information deemed to be ‘irrelevant’ by this person was excluded while other issues that were important from the perspective of the moderator were noted down. Second, the participatory exercises held in Maheva resembled group discussions where a number of people were trying to get their voice across to one person leading the exercises, leading to those running the exercise to retain a substantial amount of discretion to decide who’s voice is included and who to exclude. Third, those conducting the participatory exercises were clearly seen as more ‘powerful’ than those participating from the manner in which the crowd was addressed, how they sat facing the rest of the group and the way in which those gathered addressed the team, with deference, tacitly limiting how free they felt in putting their views forth. In this way there were unequal power dynamics between those conducting the exercises and those participating in it. Kothari (2001:142), touches on this aspect too when she notes that participatory techniques are at times “...in danger of encouraging a reassertion of power and social control not only by certain individuals and groups, but also of particular bodies of knowledge.”

Moving one level higher, the second face of power was also seen in the meetings of the City Advisory Committee in a number of different ways. First, just as Gaventa (2005) argues hidden power in policy spaces is exercised by powerful actors by determining who gets access to decision-making processes. It is seen that while the CAC is, on paper, an objective collection of relevant stakeholders, in reality those in the committee were selected due to positive pre-existing professional relationships with the GEAG.

On being asked about why individuals within the steering group participated in it, a senior member of the project team in Gorakhpur notes,

As I said, it was more to do with the personal influence and individual relationships. The mayor came because she wanted to be seen to be associated with the GEAG and we used that...<sup>98</sup>

While, the CAC was a not a forum where its participants were contesting over resources, the manner of its functioning and formation were also not dissimilar to ‘patrimonial’ principles where access to resources is exchanged for political allegiance (Theobald 1982). In traditional patrimonial relations resources are exchanged for patronage, here engagement in a high-profile local policy process and sometimes, accompanying perks (e.g. foreign travel to international meetings<sup>99</sup>) were seen to be exchanged for tacit or explicit support for decisions (ibid). In this way, the CAC as a policy space was controlled through the inclusion of largely voices of agreement, which adheres to the way in which Lukes’ (1974) conceptualised the functioning of the ‘second face of power’ in policy spaces. This point is also congruent with Kothari’s (2001:147) observation that participatory spaces are prone to being managed in a way so that decisions taken within them “...produce the norm, the usual and the expected.”

Gaventa (2005), in further exploring hidden power, argues that it is also manifested through controlling the issues that are included and excluded from discussions in policy spaces. As such, international meetings were one platform where this type of power was evident as these were seminal in determining a number of major characteristics of the ACCCRN initiative. The framework for the ACCCRN, important processes to be followed and the overall objectives --the defining features of the initiative -- were handed down to NGOs implementing the initiative in the cities at these international meetings. Starting with the analysis at the broadest level, the decision to implement an initiative aimed at enhancing the resilience of cities across Asia to the exigencies of a changing climate was one taken purely by the donor organisation and communicated to others involved in the initiative within these spaces. A senior member of the project team from the donor organisation relates exactly this when he says, “...we as the Rockefeller Foundation decided that we will work on urban climate change resilience,

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<sup>98</sup>01-08-2010

<sup>99</sup>Interestingly, Carmin e. al. (2012) writing in the context of Quito also note that prominent policy actors got involved in devising climate change adaptation plans for the city in order to ‘build their profile’ by attending interenational meetings and conferences.

that was our decision, nobody else decided that, nobody at the community level...”<sup>100</sup>. After establishing this very broad strategic goal these meetings were also used to stipulate the stages and steps that would need to be followed in every city. A senior member of the project team in Gorakhpur describing what transpired in such forums says, “...the basic frame of the project- that was explained to us...”<sup>101</sup>. This ‘frame’ of the process that had been set began with establishing a steering group, undertaking vulnerability analyses, completing sectoral studies, executing pilot projects, consolidating a city resilience strategy and finally, formulating concept notes, building proposals and then launching resilience building interventions. As it will be explored in the subsequent sections, through framing the ACCCRN initiative as a sum of these processes, the Rockefeller Foundation presented a constrained set of possibilities to organisations that were to implement the project.

Also, as discussed earlier, the Rockefeller Foundation used these meetings to shape action on the ground through elucidating the criterion that individual resilience building actions proposed by NGOs within cities would need to meet in order to receive funding. Even though official project documents outline the manner in which ‘program partners’ fed into the criterion development process, according to a member of the team evaluating the ACCCRN there was no discussion within these international meetings and these criterion were prepared “...behind closed doors,<sup>102</sup>” before being passed on to those running the project in these cities at these meetings. Explaining this problem in international policy spaces further, a member of the project team from Gorakhpur said that opportunities for communicating the ‘ground realities’ (or as he termed it “the feel of the community<sup>103</sup>”) in Gorakhpur were not adequate or enough; and on being asked if he felt that spaces for those implementing the project to have a say in the construction of the funding criterion should have been provided, he categorically replied to say “...yes, it would have been good if that had happened.<sup>104</sup>” Therefore, as international meetings and workshops were used for the transfer of knowledge, for outlining the agenda, explaining processes to be followed and criterion to be met, they were theatres for the functioning of ‘hidden power’. The manner in which international meetings

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<sup>100</sup>23-09-2011

<sup>101</sup>21-07-2010

<sup>102</sup>24-6-2011

<sup>103</sup>30-7-2011

<sup>104</sup>30-7-2011

curtailed the agency of organisations implementing resilience-building interventions resonates with Cooke and Kothari's (2001:9) observation that, at times there are structural problems in donors instituting genuinely participatory processes which then leads to the danger of grassroots organisations becoming "...the human software through which investments can be made with least opposition."

### 6.3.2 Invisible Power in Policy Spaces

Lukes (2005) spoke of the 'third face of power' that resembled Gramscian notions of hegemony where the securing compliance from the less powerful is a more tacit process. Gaventa (2005) argued that this 'invisible' power "...shapes the psychological and ideological boundaries of participation. Significant problems and issues are not only kept from the decision-making table, but also from the minds and consciousness of the different players involved..."(ibid:15). This too was evident in community meetings held in Gorakhpur mainly through issues of how local imbalances in power seeped into these policy spaces.

A good example of this was the elite domination of many community meetings. Almost in every locality where participatory exercises were being held there were certain individuals who were clearly demarcated from others. This demarcation was established by being physically seated at a different level than the rest of those gathered; as well as, for instance, by taking the lead in answering the questions and interjecting while others were speaking. In one community meeting this became so acute that the participatory exercise started to resemble an interview between the project team and one other individual. In another instance, elite participants sat separately from the rest of the group and dominated discussions explicitly. Interestingly, a number of volunteers picked up on this and one of them poignantly commented,

It's the literate people who tend to dominate, and their perspectives and problems are very different to the ordinary folk. So I feel that if everyone speaks their mind, in their own way-that's the best thing possible. The meeting was held because everyone was to get an opportunity to put their views forth but this did not happen<sup>105</sup>.

The fact of these individuals being 'elite' was mostly a function of their higher cast. In a predominantly lower-caste locality (48% of those surveyed in Maheva belong to the

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<sup>105</sup>22-05-2011

*Nishad* community,-an officially designated ‘backward caste’<sup>106</sup>, many of those who dominated discussions were from the higher caste *Brahmins* (6.5%)<sup>107</sup>. Their elite status was also seen through their relative affluence (in an economically-depressed neighbourhood) that, as the volunteer noted, impacted their education and awareness levels in turn. ‘Invisible’ power was evident not only because the space for these elites to air their views was unproblematically acceded to them by other members of the community but also because those running the meetings /exercises did not contest this domination, tacitly accepting the higher status of these individuals. Kothari (2001: 142) argues that in cases where participatory methodologies do not adequately engage with local level power dynamics they stand to reproduce “...these in-equalities and of affirming the agenda of elites and other more powerful actors.” Similarly, Mosse (2001) also argues that participatory techniques can reflect, reproduce and reassert skewed power relations between community members<sup>108</sup>.

Another way in which the operation of invisible power was evident in these community meetings was through the fractured participation of those from the lowest castes. On speaking with volunteers who conducted the household survey (the primary data gathering exercise in Maheva) it emerged that they had not included any individuals from the *Harijan Basti* or the locality of the lowest castes. This was because traditionally the lowest castes have occupied territories peripheral to villages/towns and in Maheva too this locality was, not distant from but slightly detached from the other localities and so there was some ambiguity regarding its inclusion in the project. Also, while not stated explicitly it was clear from the way that volunteers described the locality that they were not familiar with the area and did not frequent it. This oversight during the household survey meant that their concerns were not recorded and also did not form a part of the participatory exercises. On being asked about the involvement of the lowest castes in the project, a volunteer commented on the participatory exercise and said, “...those living in the *Harijan Basti* did not attend. If they had been there then they would have told us some specific problems that they face<sup>109</sup>.” Second, in a group discussion with volunteers, the researcher raised a question around their experiences in

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<sup>106</sup> Household Survey Data

<sup>107</sup> Household Survey Data

<sup>108</sup> This is problematic in the context of climate change and disaster as range of theorists have explored the manner in which marginalised communities are particularly vulnerable to the impacts of climate change (Wilbanks et. a. 2007)

<sup>109</sup>28-02-2011

engaging with the lowest castes in the neighbourhood and attempting to include them in decision-making in the project. To this a volunteer, a *Brahmin* girl, replied that individuals from these castes have a hard time in grasping the questions and take a very long time in answering. This response was indicative of inherited biases within the volunteer group; and as the volunteers are the link between the project and the community, such biases could have serious repercussions for those that are included and excluded from the project. Conversely, there is also a concern about the degree to which those from lowest caste will engage with a volunteer if he/she is from a higher caste and due to historical social trends of problematic inter-caste relations- a tangible problem that did not appear to be adequately appropriated in project plans. This issue is emblematic of a much larger problem of the manner in which development interventions continue to treat the ‘community’ as a homogenous entity, overlooking the many fissures that exist within this (Cannon 2008). Dodman and Mitlin (2011:8) in their critique of Community Based Adaptation also outline how ‘communities’ disguise a number “...of exclusions that exist within communities based on age, gender, and socio-economic position.” Similarly, Hickey and Mohan (2004:17) argue that some approaches of participation tend to,

...romanticize and homogenize the places in which political action occurs. The most prevalent tendency here is to treat the ‘local’ and ‘community’ as self-evident and unproblematic social categories... This risks treating places as harmonious entities untroubled by inequalities of power and wealth and the political agendas.

Echoing these concerns is an observation in the mid-term evaluation report of the ACCCRN initiative,

Large meetings promote multi-directional knowledge sharing by gathering all parties in one place - yet they may also constrain knowledge sharing of certain partners who cannot attend these meetings or feel uncomfortable in that setting (i.e. many women, marginalized groups, and representatives of poor communities). (Barr 2011: 24).

Therefore, invisible power that is exercised through “...the socially structured and culturally patterned behaviour of groups, and practices of institutions,” (Lukes 1974:67); was evidenced in the tacit privileging of elite perspectives as well as the absence of the most marginalised voices within community meetings.

## 6.4 Participation in Policy Spaces

The dynamics of the policy spaces and the type of power that operates within these determines the nature of participation. A wide range of theorists have proposed an equally diverse array of schema to understand the nature of participation (see section 3.2.3 for more detail). This section uses Arnstein's (1969) 'Ladder of Citizen Participation' as an organising framework while also drawing on typologies of participation offered by Tufte and Mefalupolos (2009), Cornwall (2002), (1996) and Mohan (2001) to argue that there are different levels of participation in the ACCCRN.

### 6.4.1 Tokenism, Instrumentalism and Functional Participation

As discussed in the preceding sections, the household survey was an 'invited' policy space that was the theatre for the functioning of visible and hidden power that defined the nature of participation that took place within it. Arnstein (1969) in her widely cited three-step schema for understanding citizen participation in policy processes proposes 'tokenism' as the second step of participation. One form of participation within tokenism entails "inviting citizens' opinions" through "attitude surveys, neighbourhood meetings, and public hearings" this provides power holders with the "evidence that they have gone through the required motions of involving 'those people.' Attitude surveys have become a particular bone of contention," (ibid: 2). Similarly this survey too invited the opinions of the residents of Maheva and allowed ACCCRN processes at the community level to lay claim to community involvement. This was despite the fact that the broad programme of action for ACCCRN in Maheva had already been set and funds from the Rockefeller Foundation had been released to GEAG for action to reduce the harmful impacts of 'water-logging' in the neighbourhood (GEAG 2010). Extending this argument, it is seen that Tufte and Mefalupolos (2009) include 'consultation' as one of four types of participation to note that this is "...an extractive process, whereby stakeholders provide answers to questions posed by outside researchers or experts... this consultative process keeps all the decision-making power in the hands of external professionals who are under no obligation to incorporate stakeholders' input," (ibid: 7). This too was true to an extent for the household survey that took place in Maheva for a number of reasons. For example, in an attempt to gauge the vulnerability of the local population in order to determine pathways of resilience, the survey included a question that sought to gauge reasons for recent adult deaths in the household: a perusal of the survey's results makes clear that after 'illness' the second highest cause of death was

‘drinking excess liquor’<sup>110</sup>, yet the actions undertaken in Maheva as part of this policy initiative did nothing to address this crippling concern. This is indicative of the fact that despite the survey data, the ACCCRN was already scheduled to proceed in certain defined directions. Mosse (2001) touches on a similar issue when critically analysing certain participatory methods, he demonstrates how these do not reveal an alternative to the ‘official view’ but at times serve to further legitimise the official discourse with the testimonies of community members. On being asked about these problems in participation, a member of the project team running the initiative in Gorakhpur agreed that there were fissures in this process to note,

...the community comes after many many layers of decision-making, the community unfortunately comes last, they have no say in what work should be carried out<sup>111</sup>.

‘Functional participation’ is understood as a pathway to improving efficiency in project delivery seeks community participation but only as a means of enhancing the effectiveness of programme delivery after the main decisions have already been made by external agents (Cornwall 2002). Tufte and Mefalupolos (2009:7) term this ‘participation by collaboration’ and argue that this is when stakeholders, “...participate in the discussion and analysis of predetermined objectives set by the project,” and contend that “...this does not usually result in dramatic changes in what should be accomplished, which is often already determined.” Cleaver (2004:275) supports this argument by noting the manner in which “...critics have highlighted the instrumental nature of many participatory initiatives, the focus on efficiency over empowerment.” Participation in community meetings falls largely within this bracket too. This is for a number of reasons. First, as it has been discussed in the preceding paragraphs, just as with the survey, the major directions that the project was to take had been determined prior to the meetings. These then became a forum to only discuss more ‘efficient’ ways of achieving these preset objectives. For instance, the decision to engage with the issue of water-logging had been made even before discussions with the community began but the community meetings became a platform for the project team to better map the areas that suffered worst from this problem and the civic services that were impacted by this in the neighbourhood. A key component of many of these meetings was getting those

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<sup>110</sup>Household survey data

<sup>111</sup>27-07-2010

who were present to explain drainage patterns and households most vulnerable to waterlogging. Second, as such these community meetings became spaces where vast amounts of information was collected in a relatively short span of time from those who had a detailed understanding of the neighbourhood. In doing so, these meetings then also subscribe to another feature of functional or instrumental participation that argues its central purpose is the achievement of, “efficiency by limiting funders’ input” and making “projects more cost effective” as “those participating help mitigate costs by contributing labour and overseeing other activities,” (Cornwall 2008: 272).

A discussion on participation within the ACCCRN would not be complete without a look at the Shared Learning Dialogue process. Used widely within the ACCCRN this is “...an approach to participatory planning and problem-solving in complex situations, characterised by non-extractive, mutual learning,” (Moench et. al. 2011: 123). Essentially, this is an iterative, semi-structured meeting format used at various levels in the ACCCRN but in Gorakhpur and Indore it was deployed most extensively at the city level. The Rockefeller Foundation and empowered international actors such as ISET stipulated the use of this methodology to ensure a multi-directional flow of information and abet genuine participation by “...involving stakeholders in an open manner;” (ibid). Yet, much of the participation that took place in spaces where SLDs operated could be seen as ‘functional’ or ‘instrumental’ as decision-making was relegated to “marginal choices” (Cornwall 2008: 279); this was clear in a few different ways. In Gorakhpur and in Indore, SLDs were most widely used to run meetings of the City Advisory Committee. From all accounts, these meetings were used to validate, ratify and suggest amendments to plans formulated by the city partners as opposed to being platforms for the genuine garnering of fresh perspectives. The agendas for meetings were established by GEAG and TARU and they were the drivers of the process. A member of the project team in Indore notes that CAC through SLDs was responsible for providing direction as strategies and reports were prepared prior to these sessions and ‘presented’ for discussion in these forums, as such the scope of the discussion was already established. Supporting this point, the mid-term evaluation report of the ACCCRN notes,

The results of the Vulnerability Assessment and Sectoral studies conducted under ACCCRN have been presented and discussed in the CACs, often as a formality.... (Barr 2011: 29)

Similarly in talking about the role of SLDs within the project in Gorakhpur, a member of the project team underlines the important but nonetheless ‘incremental’ role played by this methodology to say,

For example, our vulnerability assessment yielded some information on the health situation of the city but during an SLD someone on the steering group from the medical college was also able to put their view forth and explain the situation better. So, they enrich information, they validate information, give direction, they are a good reality check<sup>112</sup>.

In this way, the SLDs became participatory technique that is “...practical and technical, concerned with project-dictated imperatives of efficiency, with visible, manageable manifestations of collective action,” (Cleaver 1999:598).

Therefore, not only did SLDs subscribe to the characteristics of ‘functional’ or ‘token’ participation due to the somewhat curtailed vision of participation in spaces where they were applied; the justification for their use also sprang partly from ‘efficiency’ arguments that encouraged the participation of stakeholders to facilitate ownership, sustainability, build consensus and reduce the time and cost burdens of collecting different kinds of knowledge to consolidate a more complete understanding of the city system (Cornwall 2002, Mohan 2001). Elucidating this point was a senior member of the project team from the donor organisation who, on being asked to explain the advantages of the SLD process, said it seems like a “logical way<sup>113</sup>” to,

...get different parts of a system be it government or outside of government that have relevant data and relevant experience that but maybe don’t see the full suite of issues and opportunities that can get them talking to each other and get them sharing and integrating information, in order to understand what are the climate impacts and that’s information that can be brought in externally but needs to be owned and contextualised locally..<sup>114</sup>

Touching on this aspect of the limited empowerment and transformational value of SLDs in comparison to other existing tools such as the Participatory Rural Appraisal (PRA) for organising participatory spaces, a member of GEAG (an organisation with

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<sup>112</sup>27-07-2010

<sup>113</sup>07-07-2011

<sup>114</sup>07-07-2011

substantial expertise in employing a range participatory tools prior to their engagement with the ACCCRN) notes,

SLDs resemble focus group discussions, SLD in my opinion, a methodology and not a concept/theme in itself. PRA is more of an ideology. Even a bureaucrat can do a SLD but if a government person starts doing a PRA without orientation-it will be a disaster... Another difference is that PRA empowers but SLD is just a dialogue<sup>115</sup>.

#### 6.4.2 Citizen Power and Transformative Participation

The most progressive form of participation in policy spaces is what Arnstien (1969) calls ‘citizen power’. Here citizens are partners in decision-making, they have the ability to substantially influence policy outcomes and in certain cases “...be in full charge of policy and managerial aspects,” (ibid: 11). Sometimes also referred to as ‘transformative participation’ this is when policy spaces are platforms for non-hegemonic voices that are mobilised for achieving substantive change (Mohan 2001, White 1996).

There is scant evidence of this form of participation with the ACCCRN as unarguably, the most prevalent form of participation found within the initiative in Gorakhpur and Indore was functional and instrumental. However, it is critically important to understand that in contexts where there is no precedent for the participation of citizens in policy processes, the spaces that were opened up by the ACCCRN hold the promise yielding positive returns for citizen engagement in the public sphere and with complex issues such as climate change, in the future. Therefore, this section will not present the transformative impact that participation within the ACCCRN had on citizens; but, just as Cornwall (2002) argues that modalities of participation can develop, evolve and induce broader change, this chapter will give examples of ‘seeds of engagement’ that could develop into more substantive forms of participation in the future.

While the preceding sections have explored the fissures in participation at community level, it needs to be noted that the ACCCRN was the first major development and policy initiative that sought the participation of citizens in decision making in the neighbourhoods that the project operated in. A large number of respondents closely

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<sup>115</sup>21-07-2010

involved with the initiative in Maheva, Gorakhpur related how the community had never before come together in this way, through meetings, discussions and participatory exercises to reflect on problems that affect them all. For instance, in a meeting with community members, the researcher asked whether they had ever previously been invited to participate in a decision-making process that would impact their neighbourhood, all respondents were unanimous in their response, they said,

Community member 1- Before this institution no one has worked with us in this manner.

Community member 2- Earlier we were forced to deal with problems individually.

Community member 3- No one has asked us for our opinion before this project.<sup>116</sup>

This is why throughout the researcher's time in the field, it became apparent that the ACCCRN has induced a sense of 'community' in the neighbourhoods where it operates. Prior to the ACCCRN, target communities in Gorakhpur and in Indore did not share strong associative spaces but, even though there were some instances of conflict, the project bred these spaces and has started to enhance social bonds of community members with one another. For example, Mahalaxmi Nagar, Indore has houses with walled compounds and scant spaces for public gatherings. We see that all the members of the User Group formed as part of the Pilot Project on Conjunctive Water Management in this neighbourhood seemed to agree that the project had provided them with a unique space in which to discuss and share issues as a springboard for action. The Secretary of the user group said that the group allows them to learn from 'each other' and said in these meetings he heard about how water harvesting had worked for another member of the group and was then inspired to undertake the similar activity in his compound too. They felt that such a space was unique and had never really been attempted before in their neighbourhood. This sentiment is also mirrored in Rahul Gandhi Nagar, Indore, where the community also underlined that their involvement in the User Group had helped consolidate a shared identity and a collective conscience,

We have now started to discuss and ponder over problems that we are facing in a collective manner. This is not only true for water problems but a range of other

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<sup>116</sup> 03-08-2011

problems too. Earlier we didn't speak to each other but now thinking over all this in a collective manner has proved very helpful<sup>117</sup>.

A number of theorists have commented on the importance of community association as an important step towards genuine and deep participation. For instance Veneklasen and Miller (2007) explore this through their concept of 'power with'; this is an expression of power that is derived from building collective strength, mutual support, solidarity and collaboration and demonstrate how diverse groupings of people (for example advocacy groups and activist organisations) employ this to successfully enter policy spaces that were previously closed to them. Cornwall (2002) also posits such associations as a preliminary step towards transitioning from nominal forms of participation to rights based approaches that hold transformative potential through engaging with issues of power. Hickey and Mohan (2004:159) argue transformation is possible when participatory approaches "seek to engage with development as an underlying process of social change rather than in the form of discrete technocratic interventions;" and this 'community cohesiveness' held the promise of such broader social change.

Just as spaces that the ACCCRN bred at the community level are possibly the building blocks of a more empowered citizenry, Shared Learning Dialogues and the spaces that they operated in also seem to hold some potential for inducing the evolution of improved citizen engagement in policy processes at the city level. The City Advisory Committee was a platform where SLDs were frequently employed and a large number of respondents agreed that this was a novel and unique space where individuals from diverse parts of the city could come and deliberate over matters affecting the city. Echoing this point is a senior member of the project team from the Rockefeller Foundation, who says,

...you have not seen a lot of work of that nature in the cities...where civil society, government, private sector and academia- where different sectors come together, collectively try and analyse and solve problems that face the city and systems within the city as a whole."<sup>118</sup>

Apart from the fact of these spaces being 'convening platforms' for diverse stakeholders who ordinarily would not interact, these spaces also became unique platforms for the limited interaction of diverse knowledge systems. Not only did the SLD allow the

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<sup>117</sup>19/1/2011

<sup>118</sup> 23/9/2011

members of CAC to incrementally comment on and add to plans and strategies that GEAG and TARU present to them by drawing on their inherited knowledge; these in turn also became avenues where global knowledge on climate change and its impact on the city system could be inserted and shared with eminent citizens by agencies such as GEAG and TARU, with the potential to influence the present and future policy processes in the city. Through this circulation of knowledge, collaborative deliberation and the garnering of consensus on key issues that impacted the city, these spaces also started to embody, in part, ‘power with’ that has the potential to pave the way for citizens to have a greater say in broader policy processes impacting the city system (Veneklasen and Miller 2007).

Importantly, this learning and sharing of information through SLDs in the CAC took place repeatedly and iteratively. Cornwall (2002) critiques fleeting and transient opportunities of participation provided by the powerful and says that the potential for such opportunities to impact the policy process “is often relatively insignificant” (ibid: 20); instead she argues for more durable spaces that lend themselves to a deeper culture of participation. Dodman et. al. (2013) underline the importance of iterative processes to building resilience as they help update projections and information in light of the high amount of uncertainty regarding the dynamics of climate change. Drawing on this understanding, SLDs are thereby structured as “...multiple iterative sessions that allow for sequential growth in understanding and typically lead to increased levels of comfort and more meaningful dialogue among participants,” (Moench et. al. 2011: 152). In Gorakhpur and Indore, it is still to be seen whether associations forged through SLDs in the CAC will endure past the duration of the ACCCRN initiative but in Surat, the third city in India (not part of this research), the CAC is being given the legal status of a ‘trust’ that will ensure that this will be a durable participatory space. Commenting on this ability of SLDs to draw on diverse knowledge systems in a sustained manner, a member of project team from the Rockefeller Foundation says,

... because of the iterativeness and because its pulling information from different scales and different kinds of stakeholders it’s a lot less linear process and so I think it’s a good tool for some of the complex systems and challenges where a strictly linear approach might not get you the most effective solutions, it

might get you good solutions but it might not ultimately be the more effective solution<sup>119</sup>.

Essentially, the kernel of a more transformative form of participation and citizen engagement was possibly planted in the CAC through SLDs due to the fact of them being an iterative and sustained convening space where diverse knowledge systems interacted to build consensus and shared learning, a space which saw the beginnings of ‘power with’ in cities devoid of any such associative spaces (Veneklasen and Miller 2007).

## 6.5 Conclusion

After having looked at the dynamics of policy spaces, the operation of power within these spaces and the resultant nature of participation within them, this final section will look at some broad findings and insights that the analysis above provides.

Primarily, it seems clear that in the policy contexts under study, that resilience is leading to the opening up of new policy spaces for the participation of citizens in decision-making. As demonstrated in section 6.3.2, a large number of respondents interviewed by the researcher indicated that many of the spaces opened up by the ACCCRN were unique to the policy context and never before did citizens have an opportunity to participate in the decision and policy-making processes that were unfolding around them. For instance a key member of the project team in Gorakhpur who has been working in the City for decades says,

...in other projects on civic issues or other issues related to the city, there is no involvement of the citizen... At least now the dialogue has started and people have started to get engaged. Usually communities and ordinary people do not feed into policies<sup>120</sup>.

This is partly due the fact that ACCCRN draws on resilience theory where insights provided by Manyena, (2006), Mayunga (2007), Ostrom (2009) and Norris et al. (2008) apart from a range of other theorists frequently cite community engagement, as a key tenet of resilience thinking, to establish these spaces for wider citizen engagement where diverse constituencies and different knowledge systems can come together (see

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<sup>119</sup> 07-06-2011

<sup>120</sup> 29-07-2010

section 3.1.2). A senior member of the project team from the Rockefeller Foundation expanded on this to note that,

...if we are to help the poor and vulnerable in cities in terms of climate change adaptation, there is a sense that we cannot do that without structuring a process that would reach those people. If we look at resilience it needs to be dealt with at many different levels and involve a range of different people.<sup>121</sup>

One of the main methods of ensuring this participation and engagement was the SLD process (discussed in the preceding sections). And, a number of respondents outlined how the use of SLDs was ‘particularly’ important for resilience building initiatives as they allow a range of people from different sectors to come together and deliberate over issues. For instance, on being asked whether the SLD as a process lends itself particularly well to facilitating a process to build climate change resilience, a senior member of the project team noted, “...it does lend itself to unveil and understand the layers of complexity of a particular challenge and so for climate change it is a very useful tool for revealing the different interactions.”<sup>122</sup> Drawing on insights of theorists such as Osbahr (2007) and Berkes (2007) who demonstrate how the inclusion of diverse constituencies, different knowledge systems from a variety of stakeholders is seen to help build resilience (see section 3.1.2 for more detail), SLDs provide a platform for the dynamic interaction of local and scientific knowledge. When a senior member of ISET, the organisation credited with developing the methodology, was asked about the degree to which SLDs are tailored for processes aimed at building climate change resilience, he said

...there’s a top down perspective and there’s a community perspective, there’s an engineering perspective and there’s a household perspective or a gender based perspective and those are not the same and that you actually get new insights by blending them. So I think the shared learning process applies quite essentially to climate...I see this as very natural for the climate stuff<sup>123</sup>.

Therefore, SLDs that were an important process used for garnering participation were deployed because the issue at hand was climate change resilience, demonstrating the manner in which resilience was key to the opening up avenues for wider engagement of citizens in policy processes.

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<sup>121</sup>12-04-2011

<sup>122</sup>12-04-2011

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Despite this understanding of the need for diverse knowledge systems and community engagement, this chapter has explored the manner in which participation in these new spaces was fissured. The reasons for this too are entwined with very nature of ‘resilience’ as a novel paradigm of responding to climate change impacts. This chapter has provided numerous instances of how policy choices of those taking part in the spaces of engagement provided by the ACCCRN were controlled and participation constrained to a choice between options deemed optimal by powerful actors. One reason for this is the concern that the concept of climate change resilience is complicated, the modalities of implementing it largely untested and impacts of resilience building interventions unclear (Klein 2003). Therefore, the Rockefeller Foundation and other empowered international organisations such as ISET, that unarguably are one of the first prominent actors engaging with ‘resilience’ in the context of climate change and development on a large scale see themselves as stewards and gatekeepers of this novel idea. Resilience, with its emphasis on systems thinking and a rejection of the static operational environments is a complex idea, one whose translation into individual operational contexts, according to the donor, requires careful management. Commenting on the complexity of the resilience issue being a reason for agenda setting in policy spaces, a researcher charged with evaluating ACCCRN says,

I don’t think most people have got resilience yet so because they <the Rockefeller Foundation> have hung their reputation on resilience they’ve got to manage it very closely to make sure that the resilience dimensions are coming through.<sup>124</sup>

This issue is elicited once again in the researcher’s conversation with a member of the project team from the Rockefeller Foundation -- who, on being asked about why a large number of resilience building interventions proposed by organisations charged with implementing the ACCCRN such as GEAG were rejected -- said that the interventions proposed were “conceptually very weak”<sup>125</sup> and the understanding of resilience was quite low. This led to the donor undertaking a ‘road show’ across the cities selected for the project to demystify the resilience concept and bring forthcoming proposals more in line with the donor’s conceptual understanding.

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<sup>124</sup> 24-06-2011

<sup>125</sup> 26-11-2011

Closely related to this is also a more subtle incentive for the donor to shape decision-making processes and the policy spaces in which they unfold. In discussions with a variety of stakeholders with long associations with the Rockefeller Foundation, the researcher learned that organisation thinks of itself as a “development venture capitalist”<sup>126</sup>. They want to be seen to be at the cutting edge of thinking on various aspects of development, incubate new ideas, operationalise concepts before migrating to fresher themes. Therefore, being one of the first organisations to engage with resilience on such a scale they control how ‘resilience’ is interpreted, define the shape that it takes to leave an organisational stamp on it and essentially own this concept that is starting to gain immense policy traction in policy making circles across the globe.

Therefore, even as new policy spaces opened up due to the conceptual linkages between engagement/participation and resilience, the complexity and novelty of resilience as a policy issue curtailed the degree of participation that took place within these.

Apart from the particular opportunities and challenges that resilience thinking poses for people’s participation in policy processes, the analysis in this chapter also provides further empirical evidence to prove the importance of appreciating the determining role that policy spaces play in any policy process and in the nature of policies that are formulated through these (Woolmer 2006, Keeley and Scoones 2003). This is demonstrated in a number of ways.

First, these are the theatres where different discourses operating in the policy context, meet, interact and come into conflict with each other. For instance, in chapter 4 it was seen that there was a clash in the discourse accompanying the ACCCRN initiative that prioritised hydro-meteorological issues (e.g. water logging) as opposed to other issues endogenous to the policy context (e.g. the ill effects of the consumption of illicit alcohol). This ‘dissonance’ was evoked in ‘community meetings’ such as those convened in Maheva where a number of issues came up but were marginalised through the operation of hidden power and the instrumental nature of participation solicited in these meetings. This ensured that discussion was limited to an agenda determined by those constructing and convening these spaces and a curtailment of the agency of those

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<sup>126</sup>24-06-2011

participating. This incomplete participation in turn resulted in apathy and inadequate engagement from the communities in the ACCCRN (see section 4.4.1).

Second, these are also theatres within which the actors and networks attempting to perpetuate policy discourses interact and enter into contests with others operating in the policy context. For instance, in Chapter 5, it was seen that conflicts took place between epistemic communities formed as part of the ACCCRN at the city level and those that were formed at the international level. A number of issues acted as the flashpoints for this including a divergence of opinion on the optimal resilience-building interventions to be undertaken in the cities, the differential importance accorded to technical versus social factors in building resilience and the varying opinions on the degree to which the ULBs need to be involved in the resilience initiative. Many of these conflicts took place within the ‘international meetings’ (described in section 6.1.5) where the donor and other international organisations emerged influential partly due to the manner in which the boundaries of the discussion were established and the parameters of participation were set.

Third, apart from being theatres where sets of policy discourses interacted with other discourses and where policy actors/networks entered into contests with other actors/networks; policy spaces were also the interface between different discourses and sets of actors that adopted or opposed them. For example, international meetings were one important space in which sets of actors from Gorakhpur and Indore were exposed to the novel policy discourses on resilience that they then engaged with and brought into contexts of these cities. Conversely, one way in which the members of the planning agencies and ULBs in Gorakhpur rejected the discourses that the ACCCRN sought to perpetuate was through their piecemeal and passive participation in the City Advisory Committee.

This leads to an understanding of the manner in which the structure of spaces in which policy processes unfold determines the degree to which that policy will achieve its objectives and be successful<sup>127</sup>. Extending the examples discussed earlier in this section

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<sup>127</sup> Initiatives that are ‘locally owned’ and support community processes to “...identify risks and set priorities – both for community action and for action by external agencies,” are seen to be key to reducing risk in urban areas (Bul-Kamanga et. al. 2003: 202)

it is seen that, the sidelining of endogenous priorities in favour of an external discourse through the way in which community meetings were constructed curtailed the agency of the residents of Maheva. This in turn led to resistance and scepticism from the community towards this policy initiative but as the successful building of resilience is contingent on community ownership/participation/engagement (see section 3.1.2), this holds the potential to detract from the impact that the initiative is likely to have. Also, epistemic communities formed at the international level emerged influential in contests with those at the city level through the manner in which the limits of discussion were set in international meetings that they convened. The attribution of lower priority to the views of those with a clearer understanding of the operational context in which the ACCCRN was to unfold goes against substantial evidence that proves the critical importance of local knowledge to the success of development interventions (Chambers 1983). Therefore, the analysis presented in this chapter is a clear argument for greater sensitivity on the part of those designing and executing major development policy initiatives towards the nature and structure of policy spaces; it also adds to the body of evidence that highlights the importance of equal power relations and genuine participation from those congregating in these spaces to the success of the development policy initiatives themselves.

Having looked at the insights around resilience, policy processes and participation, this section will briefly engage with the manner in which the 'urban context' interacts with the dynamics of 'spaces'. As seen earlier in this thesis, due to the critical importance of garnering a diversity of perspectives and drawing on different knowledge systems to building resilience, there was an effort at ensuring some degree of community participation. But, the urban context posed substantial challenges to the construction of such policy spaces too.

Urban informal settlements such as Maheva, Gorakhpur suffer from a lack of social cohesion as a result of high rates of in and out migration. People hail from different parts of the country-side, speak different languages, participate in diverse livelihood activities and due to various factors including long hours at work, they do not share strong communal bonds with their neighbours. The person charged with running these participatory exercises described the difficulty of running them in urban areas as opposed to the rural context to say,

...these exercises are difficult in the city because these people are originally from different villages and therefore there is very little unity...also, in the village when the women go to collect fodder they go together, in a group, when the men go for their daily labour, they go in a group, so people in villages are more 'together'.<sup>128</sup>

This observation finds resonance in theory on participation where, important tools of community participation such as the Participatory Learning and Action and the Participatory Rural Appraisal have been found to be deficient in cases "...where the community is very heterogeneous," (Korf 2002:67). And Mitlin and Thompson (1994: 3) note how "Communities may be more heterogeneous in urban areas than rural areas. Urban settlements may include residents with a great variety of different birthplaces." The person in charge of running participatory exercises for the resilience initiative continued to describe how when the same exercises are run in rural settings, 'wealth rankings' and 'social maps' for the entire area can be provided quite easily by a small gathering of community members but in urban areas these exercises are much more difficult. This is because, first, people have a lesser understanding of their neighbours' household dynamics and second, because community meetings sometimes become theatres of conflict as the gathered individuals have very different opinions/perspectives on the same issue. Touching on this issue is another member of the project team charged with running these exercises with community members in Maheva,

...there is a lot of simmering conflict here that sometimes erupts when we are conducting these sessions...in the village, even if there is conflict, the community members try not to bring it to the fore in these settings ...but here there are many issues around land and sharing of land that is scarce that enhances ill feelings...<sup>129</sup>

Apart from community cohesion, a number of individuals involved in designing and implementing participatory exercises outlined how the pattern of life and the nature of livelihoods in the urban settings renders many established protocols of seeking community participation ineffective. Lefebvre, in his now famous treatise on urban space also touches on the pace of life in cities to argue that here "...many elements and aspects of capitalism intersect in space despite often merely being part of the place for a short time, as is the case with goods or people in transit," (Shields 2004:209). This

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<sup>128</sup> 25-04-2011

<sup>129</sup> 25-04-2011

poses problems for participatory methods take time and unlike rural areas where the primary source of livelihood is farming, most of Maheva's residents were involved in some form of daily wage manual labour where attending the participatory exercise would result in a direct loss in earning. Another member of the project team in Maheva who also has experience of using participatory methods in rural settings says,

...the thing is that in towns people hesitate to give time to these exercises but in the village people sit and take part with great patience...in the village if we want to sit and speak to the community for the whole day, they will do it but here they cannot as they are not farming their own land but they daily wagers who light their stoves at night only by working through the day<sup>130</sup>.

These problems of constructing robust participatory spaces in urban areas are not peculiar to climate change resilience initiatives. However, as seen in section 3.1.2, community participation and a diversity of perspectives are its core tenets and therefore negotiating this is of particular importance to those engaged in successfully steering initiatives to build climate change resilience in urban areas.

Finally, it would be instructive to momentarily step back from the minutiae of the argument presented in this chapter and reflect on broader lessons that these findings on the interaction of resilience and policy spaces hold. Chief among these is the insight that even as 'resilience' adds unique/individual elements to dynamics of policy spaces (as seen in the first two paragraphs of section 6.5); at the same time, initiatives to operationalise it are also subject to the pressures of caste, class, local politics and inequitable social contracts as most other policy initiatives<sup>131</sup>. While resilience thinking provides some valuable tools to engage with complex and concatenated problems it is not a panacea or 'silver bullet'. Therefore, the deployment of resilience must be accompanied by a meaningful understanding of existing imbalances in power in particular contexts.

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<sup>130</sup>25-04-2011

<sup>131</sup>This is why some of the problems of participation at the community level discussed in this chapter with regard to ACCCRN (e.g. elite domination, replication of local power imbalances, functional participation) resonate with those that have also been found in Community Resource Management and Community Based Adaptation initiatives too (Dodman and Mitlin 2011).

## 7. Discussion and Conclusion

The preceding three chapters examined the insights that empirical data and theoretical treatise provide on the interaction of policy environments and initiatives to build climate resilience. This chapter will attempt to draw the various strains of analysis together by examining the broad themes and learning that emerge from this work.

### 7.1 Policy Environments and Resilience<sup>132</sup>

If there is one conceptual thread running through this work it is that issues of power and politics have a determining influence on the manner in which resilience-building initiatives play out in policy environments. This builds on a small but increasingly vocal body of literature that demonstrates the manner in which “...resilience is always contested and conflict-ridden; it is a function of power around which winners and losers emerge,” (Lankao and Qin 2011: 145).

Through Chapters 4, 5 and 6 the attempt was to demonstrate how discourses, actors/networks and spaces interact with a process of building resilience. This final chapter will attempt to link the three chapters together by a) using some of the 10 tenets of resilience thinking presented in section 3.1.2 as a guiding framework; b) discussing how the ACCCRN tries to operationalise these in a policy environment; c) demonstrating the influence of the policy environment on the operationalisation of each tenet. Following this, the chapter will answer each of the four research questions listed in section 2.1.

In essence, the section that follows revisits the discussion in the previous chapters so as to distil an empirical understanding of the manner in which issues of power and politics that characterise policy environments affect initiatives to build resilience.

#### 7.1.1 Diversity

The first and most widely understood tenet of resilience is ‘diversity’. Section 3.1.2 explored how different theorists interpret this differently. Holling (1973) argued that the resilience of an ecosystem is hinged on the diversity of functional groups. Cutter et. al. (2010) take these notions of diversity developed in the context of natural systems and apply them to the human to argue that resilience results from economic and livelihood

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<sup>132</sup> This section employs the framework explored in- Bahadur, A. Ibrahim, M. Tanner, T (2013) Characterising Resilience. *Climate and Development*. DOI:10.1080/17565529.2012.762334 28th January

diversity. Berkes (2007) and Osbahr (2007) extend this principle into an understanding of the manner in which diverse constituencies should be involved in policy processes to build climate resilience.

Drawing on this tenet of resilience, the ACCCRN attempted to work with the idea of diversity for resilience building in a number of different ways. In section 4.1.3 it was observed that this resilience initiative involved a more enhanced and diverse array of actors in order to garner information from different parts of the city to view it as a 'system'. Therefore, for instance for the first time in a city such as Gorakhpur we see the involvement of Urban Local Bodies, government departments, parastatal agencies, academics, meteorologists, businessmen and community members in the same policy initiative through the Shared Dialogue Process.

While the ACCCRN was successful in bringing these diverse stakeholders together, it did not anticipate the conflict that occurred as a result of the dissonance between the priorities and worldviews of these different parties (as discussed in section 6.2.1). This conflict then led to certain groups such as ULBs to reduce their involvement in the ACCCRN and to the marginalisation of certain groups who were perceived to hold views that were incongruent with the majoritarian view by those convening these multi-stakeholder dialogues. As a result, a narrower vision of diversity was then realised in this process of building resilience. This provides a valuable insight into the manner in which this important tenet of resilience can be integrated into an operational initiative but also the gaps and pitfalls that need to be anticipated. This point also finds validity through its strong resonance with Ruth and Coelho's (2011:332) treatise on managing complexity of urban systems under climate change, they argue that,

...managing the contributions from a large and diverse set of stakeholders has itself become a complex management task... As a consequence, the extent of stakeholder dialogue and involvement is frequently curtailed to keep projects within resource constraints.

This point also speaks to a body of thought that considers resilience to carry a 'technocratic understanding of change'. For instance, Kuhlicke (2010) argues that resilience is sharply focussed on changing practices and policies without adequately acknowledging the inherent political complexity in issues of managing risk. Similarly, here

we see that ACCCRN understood the conceptual links of resilience with systems thinking to convene meetings where those with knowledge of different parts of the city system could come together; but did not anticipate the conflict that occurred as a result of the dissonance between the priorities and worldviews of these different parties (as discussed in section 6.2.1)-especially in policy contexts such as that of Gorakhpur and Indore with no real precedence of departmental convergence.

Urban areas add an additional dimension to the politics of how ‘diversity’ as a key tenet of resilience thinking was operationalised. This is because urban policy contexts in India suffer from particular problems of bureaucratic compartmentalisation due to, for instance, the existence of urban parastatal agencies who have a powerful remit but do not come under the writ of the Urban Local Body (Mukhopadhyaya et. al. 2000). Therefore, a context recognised to have a fragmented policy environment poses particular challenges to resilience that through its conceptual links with systems thinking and complexity is hinged on the idea of convergence and collaboration between policy sectors (see section 3.1.6).

#### 7.1.2 Effective Institutions

A number of theorists also highlight the importance of effective governance and institutions in building resilience. Mayunga (2007) examines how trust, norms and networks help build resilience. Adger (2000) argues institutions that are effective and inclusive can support resilience building. Osbahr (2007:14) highlights the need for “...polycentric and multi-layered institutions to improve the fit between knowledge, action and the context in which societies can respond more adaptively at appropriate scales.”

This principle is also evident in the plans and processes of the ACCCRN in different ways. For instance, at the community level the ACCCRN attempted to induce community cohesiveness through collective action to tackle climate impacts. Therefore, we see large community meetings being convened for the first time where residents of Maheva, Gorakhpur were working together to understand how problems around water logging could be solved through collective action (these congregations were to slowly morph into citizen’s forums that would be charged with resilience building once the ACCCRN was over) (see section 6.1.2). Apart from working on

building institutions at the level of communities, the ACCCRN worked with this component of resilience theory to also try and make city level institutions more effective. This was illustrated by the emphasis that the ACCCRN laid on linking ULBs with the resilience-building processes that also saw participation from ordinary citizens (see section 6.1.3). In effect, this could also be seen as the initiative's attempt at making the ULBs more inclusive and polycentric.

While this was a valuable attempt at integrating this tenet of resilience in a policy initiative, the policy environment posed particular problems to the manner in which it was realised. For example, even as the community came together in Maheva to jointly devise solutions to the water-logging problem, they started to understand that the behaviour of the wealthier residents of the neighbourhood who had built boundary walls around their compounds was partly responsible for the inundation of the houses of certain poorer residents. This was because floodwaters would flow past the boundary walls into open compounds downstream. In this way, even as the resilience initiative attempted to bring the community together and develop networked relationships, it inadvertently exposed certain fault-lines existing within the policy context that in turn had a detrimental impact on the trust and cohesiveness that the community enjoyed. Similarly, even as the resilience initiative tried to make ULBs more receptive to communities dealing with climate impacts, it faced substantial pushback from bodies such as the municipal corporations of Gorakhpur and Indore because these organisations were entrenched in an alternative mode of functioning that did not emphasise polycentricism or inclusivity (discussed in chapter 4, particularly in section 4.4.2).

These findings on the pitfalls of engendering effective institutions as a component of building resilience, resonate with a critique of resilience that posits it as a concept that concerns itself with 'function', without paying adequate attention to 'structural' issues that engaging with risk and vulnerability entails (Swanstrom 2008; Kuhlicke 2010). Thus, even though ACCCRN drew on theoretical tenets of resilience to convene large community meetings in order to induce effective governance structures at the community level, it failed to pick up on the structural fissures that exist in complex, operational policy contexts such as that of Maheva, Gorakhpur. These findings are also congruent with another charge that is often leveled at resilience-that it is at odds with organizational cultures and institutional environments. Theorists such as (Garschagen 2013) point out that

more clarity is needed on how resilience interacts with the existing politics, norms, values, planning paradigms and regulative regimes of the institutions that it seeks to be embedded in. Similarly, the attempt by the ACCCRN to link the ULBs to wider deliberative processes in order to make it more ‘inclusive’ and receptive was at odds with the ‘politics’, ‘norms’ and ‘values’ of the organisations.

Before moving on, it is important to look at the influence of urban contexts on developing effective institutions. First, Berkhout (2008) as well as Lankao and Dodman (2011) argue that building adaptive capacity and resilience is inherently about negotiating trade-offs where resilience for one group/party can lead to the erosion in the resilience of another. Urban areas are characterised by dense settlement patterns-especially in informal settlements that were the focus of the ACCCRN in Gorakhpur and Indore. The fact of different households within an initiative’s target community living together exacerbates issues around ‘trade-offs’ in resilience-building processes. This was elucidated through the example of how boundary walls while making the more privileged in Maheva, Gorakhpur more resilient were leading to the enhanced vulnerability of others who did not have these walls. Therefore, developing trust and networked relationships amongst community members becomes particularly tricky for an urban resilience building initiative. The second issue that urban areas bring to this particular discussion is more prosaic. This sub-section examined the manner in which the ACCCRN was attempting to bring about some change in the norms, values and protocols of ULBs; but, as section 4.5 also explores, inadequate devolution of constitutional authority from provincial governments to city governments in India effectively means that cities do not have the power to make necessary changes to processes and protocols (Chamaraj 2009).

### 7.1.3 Accepting Change, Uncertainty and Non-Equilibrium Dynamics<sup>133</sup>

Section 3.1.2 examined the manner in which the resilience of systems depends upon one component of the system being able to change in response to changes in other components of the system; and acknowledging that stability then becomes a measure of a lack of resilience in systems (Norris et. al. 2008). Others have extended this understanding by underlining the importance of flexibility at an individual, organizational, and systemic level in order to respond effectively to shifting and

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<sup>133</sup>As per section 2.1.3 accepting ‘change and uncertainty’ and ‘non-equilibrium dynamics’ are two separate tenets of resilience but this sections combines the two.

unpredictable circumstances (Rockefeller Foundation 2009). Closely associated with this is also the idea that resilience is dependent on a clear understanding of how socio-ecological systems are dynamic and are not centred around a particular equilibrium state (Holling 1973). Therefore, resilience should never be equated with the ability of a system to return to the state that it was in prior to a disturbance (as that would mean that it is as vulnerable to the same disturbance) but with the ability of components with that system reorganising in a way that relationships between them persist (Folke 2006).

Section 4.1.2 demonstrated that the ACCCRN imbibed this theoretical understanding and actively sought to operationalise it in a number of different ways. Chief amongst these was the initiative's attempt to spread awareness of the prospective changes that are likely to occur through developing and deploying downscaled climate scenarios. Starting with MAGICC-SCENGEN (a statistical downscaling packaged software) and then moving onto the development of downscaled scenarios (using 9 different global circulation models); those running the ACCCRN attempted to employ such information to demonstrate that major changes in the city's hydro-meteorological systems were afoot and that policy making could not continue on the assumption of a stable trajectory. Those running the ACCCRN also were reflexive about the limitations of these scenarios and while using these to demonstrate that change was certain, employed variations among different scenarios to underline the need to prepare for uncertainties. This resonates with the global understanding of the value of scenarios, for instance Dodman and Carmin (2011:2) note that there is an,

...increasing recognition that climate science cannot provide certainty about future conditions, and that finding the best way to plan for climate impacts and identify appropriate responses is still a developing area of knowledge.

The ACCCRN's attempt at orienting crucial policy actors into a mode of operation that embraced change and uncertainty was dissonant with prevailing norms. As section 4.3.2 explores, important components of the policy context were entrenched in a mode of functioning that was geared towards engaging with present contingencies. This was not only an issue of awareness and the problems that key policy actors had with conceiving of a dynamic and uncertain future but an emphasis on the present had a 'material basis' too. More specifically, civil servants and local politicians did not see the incentive in the investment of scant financial resources, political will and organisational

wherewithal today to deal with problems that may or may not occur in the future. Conversely, not dealing with the massive deficits in public services existing in the present in these cities were likely to harm the interests of these policy actors in the short term. Therefore, even as the ACCCRN attempted to operationalise this tenet of resilience thinking, the ‘realpolitik’ of the policy environment posed tangible problems.

These findings provide further evidence for a closer study of the manner in which tenets of resilience thinking interact with the cultures or organisations that are to play a role in helping reduce the vulnerability of communities to climate impacts. Through its attempts to inculcate an orientation towards change and uncertainty the ACCCRN was attempting to bring some change in the institutional behaviour of ULBs, government departments and even local civil society organisations but achieving ex-ante change in organisations has been widely understood to be notoriously difficult (Garschagen 2013). While there is robust empirical evidence as to how organisations/institutions may have changed for the better after-shocks; there is a limited understanding of “...how radical institutional change – as urged by resilience theory – can in the context of climate change be initiated...before large disasters are experienced,” (ibid:9).

#### 7.1.4 Decentralised Decision-Making and Community Engagement

Section 3.1.2 argued that decentralised decision-making and community knowledge are also identified as important elements of building resilience in socio-ecological systems (Manyena 2006; Mayunga 2007; Ostrom 2009; Nelson et al. 2007; Dovers and Handmer 1992; Berkes 2007; Osbahr 2007, Norris et. al. 2008, CDRSS 2006). The importance of representatives from the ‘full fabric’ of the community participating in decision-making processes is seen to be key to developing community resilience (CPSSC 2011). The Committee of Disaster Research in the Social Sciences notes (2006: 237) ‘engagement’ as one four core principles of building resilience to disasters, they believe that, “...development actions that address disaster reduction (and other significant issues) must be formulated through a fair and equitable process that provides an opportunity for all affected parties to participate.” The work of Ostrom (2009) has been significant in linking the importance of communities having a say in the management of natural resources to their ability to deal with a range of disturbances. Berkes (2007) extends this point to underline that the employment of indigenous

knowledge and community perspectives are key to processes of building resilience as there are palpable gaps in global scientific knowledge around climate change.

The ACCCRN integrated this tenet of resilience thinking substantially in both research settings that are the focus of this study. Chapter 6 carries a description of the different ‘spaces’ or opportunities where those who were the focus of resilience-building activities could participate in decision-making processes and engage in project processes. First, there was the household survey in Maheva, Gorakhpur that was the initial platform through which community members could communicate their priorities (see section 6.1.1). Second, there were community meetings where residents of neighbourhoods that were the focus of ACCCRN activities such as Maheva, Gorakhpur were asked to congregate and contribute to participatory decision-making around a number of issues related to the initiative (see section 6.1.2). These meetings were, in effect, an attempt to ensure the insertion of indigenous knowledge in to project processes and ensure a degree of community ownership towards the activities of the initiative unfolding at the community level. Third, moving up one level, the City Advisory Committee was conceived to allow representatives from different sectors of the city system to deliberate, participate and collaborate on key decisions around building the city’s resilience towards climate impacts (see section 6.1.3). All these spaces were opened to allow for the ‘full fabric’ of the community to have a say in decision-making and decentralise the processes through which the ACCCRN was to move from one stage to the next.

Despite these explicit attempts at instilling an important tenet of resilience thinking in an operational initiative, Chapter 6 went on to explore the fissures in these decentralised spaces designed for the garnering of a range of perspectives/knowledge to influence the resilience initiative. Section 6.3.1 demonstrated the manner in which the household survey followed a rigid format that solicited information from the community along particular parameters that were tightly defined. Moreover, problems in the ‘performance’ of the survey including the use of probes to elicit answers from respondents that were aligned with the pre-set objectives of the initiative negatively influenced the depth/quality of information solicited from the community. Similarly, there were deficits in the degree to which community knowledge was genuinely assimilated in community meetings for a number of reasons. Primarily, the agenda for

these meetings had been established by the project team helping deliver the project at the community level and as a number of endogenous priorities did not figure on this agenda, they were excluded from project processes. Section 6.3.2 also argues that community meetings, through the exclusion of the most marginalised caste in Maheva, Gorakhpur and by privileging elite perspectives serendipitously reproduced local inequities of power which in turn limited the degree to which certain community voices were incorporated into decision making. Moving once scale of governance higher, at the level of the City Advisory Committee too we see patrimonial relationships leading to the inclusion of largely voices that were agreement with the dominant perspective as opposed to these bodies acting as the confluence of alternative narratives on engaging with risk/vulnerability that were then assimilated to embody a more democratic conceptualisation of resilience.

The establishment of these participatory spaces in the resilience initiative and the fissured participation within them is indicative of a number of broader issues with the resilience concept. First, as discussed in some of the preceding sections, the problems in participation are another illustration of how resilience remains a 'functionalist' concept that is far too concerned with management and overlooks underlying assumptions and governing dynamics of social systems (Swanstrom 2008). Therefore, while the ACCCRN effectively drew on resilience theory to convene large participatory meetings to solicit indigenous knowledge, they overlooked some structural barriers to the participation of the 'full fabric' of the community (CPSSC 2011). Second, the deficit in the translation of this theoretical tenet into an operational initiative provides further support to the growing body of literature that argues for a closer analysis of the manner in which resilience interacts with organisational and institutional cultures (Garschagen 2013). More specifically, community meetings convened by the ACCCRN had a pre-set agenda that stemmed from a 'concept note' on activities that had to be submitted to the donor before extensive participation could take place in Maheva (see section 6.3.1). This is indicative of an inadequate understanding how resilience can be built through the 'project' mode of development through NGOs where a wide and deep vision of participation has to be curtailed in order to meet deadlines, adhere to funding protocols and demonstrate progress within short spaces of time (Mosse 2001).

The research presented through the preceding chapters also illuminates the particular challenges that the urban context poses to processes of community participation for decentralised decision-making. Section 6.5 explores the work of theorists such as Korf (2002) who argue that methods of participatory development face difficulties in contexts that are socially heterogeneous; and urban areas in developing countries due to high rates of in and out migration are known to lack social cohesion (Dodman 2008). In this way, urban policy contexts place impediments for the garnering of community voices in decision-making that then influences the manner in which resilience is operationalised (more in section 7.2.3).

#### 7.1.5 Preparedness and Planning for Disturbances

Another tenet of resilience thinking that receives attention from an array of theorists is preparedness and planning for disturbances. Cutter et. al. (2008) argue that resilience is hinged on adequate planning and this entails the establishment of systems for the provision of timely information and integrating disaster preparedness in wider institutional processes. ‘Redundancy’ is also seen as critical to being prepared for and resilient towards a range of unforeseen disturbances (Bruneau et. al. 2003). This is when ‘processes, capacities, and response pathways within an institution, community, or system allow for partial failure within a system or institution without complete collapse’ (Rockefeller Foundation, 2009: 2). In essence, redundancy implies that as individual components in a system are overwhelmed by disturbance, their functions can be substituted by other components in the same system (Norris et. al. 2008).

The ACCCRN is demonstrative of an operational initiative that sought to take these theoretical insights on preparedness and redundancy and integrated them in a tangible project to help vulnerable communities deal with climate impacts. Even though this happened in a number of different ways, the Pilot Project on Conjunctive Water Management (PPCWM) that took place under the aegis of the ACCCRN in Mahalaxmi Nagar, Indore (see section 2.3.3) is an interesting example of how attempts to operationalise ‘redundancy’ were made. The primary climate impact that the PPCWM was seeking to engage with was water scarcity. Mahalaxmi Nagar, Indore suffered from an unreliable government supply and unsustainable groundwater resources. In order to supplement these methods that frequently failed in lean periods the ACCCRN sought to implement water harvesting throughout this neighbourhood. Through the formation of

water user groups, the PPCWM engaged with community members to encourage the installation of water harvesting infrastructure in their homes and communal spaces. This water harvesting system that sought to make optimal use of rainfall and waste-water by reinserting it in the ground and preventing run-off would act as a reliable and sustainable third source of water in times when the primary sources failed them. On a longer term, it would replenish the watershed and recharge tube wells. Looking at this activity in the context of the preceding paragraph, it becomes apparent that water harvesting was to add 'redundancy' to the water supply system for the households in Mahalaxmi Nagar and were to be a viable alternative to the existing sources of water supply.

Even as the ACCCRN attempted to instil redundant capacity in the water supply system by positing water harvesting as a sustainable substitute to Government water supply and tube wells, it faced opposition from the locally elected political leader-the *Pradhan*. As section 5.3.1 explores, the *pradhan* in Mahalaxmi Nagar had established an elaborate patron client network where he would provide tanks of water (delivered on trucks) when other supplies of water failed. These tanks of water were supplied to those residents who pledged their political allegiance to him and also could be relied on for electoral funds when the time came, in essence, water for the *Pradhan* was the currency that he used to consolidate a client base in his constituency. The ACCCRN through the PPCWM aimed to make the residents more self-reliant for their water needs and directly threatened the position of the *pradhan*. In his role as the political representative of the residents of Mahalaxmi Nagar, the *pradhan* wielded considerable clout that was not mobilised in favour of the ACCCRN-thereby threatening the sustainability and viability of this effort to build in redundant capacity in water supply through water harvesting.

The manner in which the ACCCRN's attempts to operationalise a key theoretical tenet of resilience were opposed by elements of the local policy environment is indicative of larger 'epistemological dissonance' in resilience thinking (see section 3.1.3). Theorists argue that resilience, owing to its roots in the natural sciences, lacks a clear understanding of how socio-economic issues combine with ecological systems (Cannon Mueller-Mahn 2010). Resilience is seen to lack an adequate understanding of the political and the ways in which risk/changes/disturbance can be socially constructed (ibid). Therefore, the ACCCRN failed to adequately engage with the manner in which

the local political arrangements (i.e. patron-client relationships) in Mahalaxmi Nagar were hinged on the vulnerability of the residents to hydro-meteorological problems (water scarcity), that in turn blocked pathways of building their resilience.

Perhaps, this is also reflective of the burgeoning understanding of the manner in which initiatives to build resilience to climate change in urban areas need to engage with a lot more than only 'climate impacts'. Rodriguez (2009) cautions against reducing the concept of urban resilience to climate impacts only and Leichenko (2011: 165) while summarising the work of a wide range of theorists says,

...climate change-related shocks typically occur in combination with other environmental, economic, and political stresses. Promotion of urban resilience to climate change will thus require that cities become resilient to a wider range of overlapping and interacting shocks and stresses;

Similarly, pathways of building resilience in Mahalaxmi Nagar necessarily implied an engagement with exploitative political relationships.

#### 7.1.6 Equity

A number of theorists expand on the idea that a high degree of equity in a system leads to its increased resilience (Adger, 2000; Adger et al., 2002; CDRSS, 2006; Nelson et. al., 2007; Twigg, 2007). Nelson et. al. (2007) find that systems may become less resilient if issues of justice and equity are not taken into account. This corresponds with insights provided by Cutter et. al. (2010), who examine the resilience of regions in eight states of the United States, to argue that regions with higher equity are likely to be more resilient. Twigg (2007) and Adger (2000) too demonstrate that the equitable distribution of assets contributes to building resilience at the community level.

The ACCCRN imbibed these views on equity when designing interventions in neighbourhoods such as Maheva through a focus on livelihoods strengthening activities. The project team assessed that a particularly vulnerable group of community members in Maheva consisted of peri-urban farmers whose lands were inundated/water-logged for extended periods of time every year leading to a destabilisation of their primary livelihood and consequently a fall in their income levels during this time. To correct this problem and ensure that the income levels and livelihood patterns of this group were maintained, the ACCCRN included an initiative to develop models of flood

resistant agriculture (see discussion in section 6.3.1). Through, for instance, demonstrating how floating beds made from organic matter (e.g. water hyacinth), could be used for the cultivation of vegetables even when fields were waterlogged the ACCCRN hoped to help prevent a dip in the income and consumption of these households. Apart from the focus on livelihoods, this emphasis on ‘equity’ was also espoused in the project’s emphasis on giving all community members an equal voice in participatory decision-making processes (see section 6.1.2). As these processes were linked to interventions envisaged under the ACCCRN that aimed to improve the material circumstances (e.g. drainage, sanitation etc.) of the residents of Maheva, the principle was that an equal voice in decision-making would prevent one group from benefiting more than others from the initiative.

These two mechanisms with objectives of enhancing equity did not unfold unproblematically in the policy environment. The effort to popularise the practice of flood resistant agriculture met with pre-existing, endogenous coping mechanisms that the community of peri-urban farmers had developed over the years. Section 6.3.1 contained a telling quote from a member of the project team who said that there were problems in the uptake of these novel farming techniques as the community had established systems of switching livelihood activities (e.g. to manual labour) during periods of waterlogging. Moreover, unlike those delivering the resilience initiative, this community also did not really perceive this inundation as a ‘disturbance’ but as part of an annual cycle that actually left their land more enriched with nutrients once the floodwaters receded. This point resonates strongly with the assertion that within resilience there is space for a fuller acknowledgement of how in any setting there are competing forms of resilience (Berkhout 2008). Closely allied to this point is one made by Boyden and Cooper (2006:7) who argue that resilience is always inherently tied to a ‘point of view’ and understanding pathways to resilience must necessarily entail attention to “specific contexts,” “local values” and “individual’s particular situations”. The other mechanism of working towards equity-participatory decision-making processes, suffered from a range of problems such as elite domination and the absence of the most marginalised voices that have been discussed in the preceding sections of this chapter. These, as noted earlier too, highlight the need for resilience thinking to engage more deeply with issues of power and politics in order to be an effective paradigm for engaging with the impacts of climate change (Leach 2008).

### 7.1.7 Social Capital

Norris et. al. (2008) count social capital (which is a combination of social support, social embeddedness, organisational linkages, leadership, sense of community and attachment to a place) as one set of resources that generate community resilience. Others demonstrate that social capital induces the formation of social networks that in turn lead to relationships of trust in the local community that help in problem solving and contribute to building resilience at the community level (CDRSS 2006). Ostrom (2009) too outlines how strong ties between community members lowers transaction costs in managing community resources and allows communities to recover more easily from disturbances. Twigg (2007) discussed social capital in terms 'shared community values' and lists it as one characteristic of a disaster resilient community.

Understanding the value of social capital to processes of building resilience, the ACCCRN employed different routes to achieve this in the policy contexts in which it was operating. In Gorakhpur, as discussed in section 5.2.4b, the ACCCRN recruited a set of volunteers to help implement and deliver the initiative. The remit of these volunteers included not only the dissemination and collection of information but crucially also 'community organisation' around issues of resilience. Taking the list of elements that together form 'social capital' proposed by Norris et. al. (2008) (as listed in the preceding paragraph) it is seen that first, volunteers helped provide 'social support' through for instance helping with day to day problems faced by the community (see section 5.3.2 for an example of how volunteers helped a community member in her engagement with the Municipal Corporation). Second, in becoming the link between the ACCCRN, the communities as well bodies such as the Municipal Corporation they helped establish 'networks' and 'organisational linkages' (ibid). They clearly played a 'leadership' function by, for instance, helping convene large community meetings as well as by spearheading a new discourse on resilience and climate change at the local level (ibid). Volunteers and the roles that they played had a key hand in instilling a 'sense of community' as it was in meetings organised by them that those gathered understood that concatenated issues of climate change and development could not be tackled by individual efforts alone and needed collective solutions (ibid). In essence, volunteers recruited by the ACCCRN were one important tool for building social capital- a key tenet of resilience thinking, at the local level.

Even as volunteers went about these diverse activities that helped build social capital, their efforts had unanticipated consequences. The recruiting of these residents as representatives of this global project that came with attendant funding and links to powerful organisations created ripples in local webs of power. This was evident through the discussion included in section 5.3.2 where it was seen Maheva's Corporator (the elected representative to the Municipal Corporation) felt threatened by the activities of the volunteers that in turn contributed to him harbouring a largely unhelpful attitude towards the ACCCRN. The building of social capital through community organisation around issues of climate and development raised awareness levels of the community that in turn places pressures of greater accountability from the corporator. Also, the leadership demonstrated by the volunteers through, for instance, assisting residents in their engagement with the local government was previously the exclusive remit of the corporator. Some of the activities that the volunteers were helping deliver as part of the ACCCRN harmed the material interests of the corporator. For example, a citizen led solid waste management scheme that ACCCRN was attempting to set up through the volunteers threatened parallel systems of garbage collection run by the corporator that entailed the hiring of private contractors who allegedly gave the corporator a cut of their earnings. In his capacity as the nodal, popularly elected politician for the neighbourhood, the 'buy in' from the corporator would have yielded considerable benefits for the roll out of the ACCCRN (see section 5.3.2 for a discussion on the potential benefits of a positive attitude from the corporator).

Therefore, yet again, this analysis underlines the need for a stronger engagement with the intricacies of politics and power in the operationalisation of resilience. As such it resonates with the work of theorists such as Swanstrom (2008) who demonstrate that certain modifications are needed in resilience when transplanting it from a concept for studying ecosystems to one that is applied in contexts with complex social and political dimensions.

#### 7.1.8 Learning

The final tenet of resilience thinking mentioned in section 3.1.2 of relevance to the discussion here is learning. Moser (2008) argues that resilience is more than just about 'bouncing back' it is essentially about bouncing back in a way so as not to be vulnerable to the same disturbance should it strike the system again. This is only possible if there

are iterative systems of continual learning in place (ibid). O'Brien and O'Keefe (2010: 378), extend this insight into a need for organisational learning when they note "...resilience building is a learning process at all levels. Institutional learning empowers at the local level and strengthens governance."

Learning has been one of the key components of the design of the ACCCRN from its inception. Drawing on the work of the Resilience Alliance, the initiative lists 'capacity to learn' as one of four guiding pillars of its vision of resilience (ISET 2009). It justifies the emphasis on learning because, "...the ability to internalize past experience, respond to it, and avoid repeating mistakes ensures that future decisions are made with appropriate caution and forethought," (ibid: 6). More specifically, learning was operationally built into the program through the adoption of the 'Shared Learning Dialogue' (SLD) tool. Section 6.3.1 includes a detailed discussion on the SLD that is "...an approach to participatory planning and problem solving in complex situations, characterised by non-extractive, mutual learning," (Moench et. al. 2011: 123). Breaking this down further, SLDs were an iterative, semi-structured meeting format that required people with knowledge of different parts of the city's functioning to deliberate on project processes, make decisions jointly, collaborate for problem solving and review key plans/strategies. The fact that this took place at regular intervals of time with an array of stakeholders was consistent with the role of learning as envisaged in resilience theory.

Even though clear attempts were made by those designing and delivering the ACCCRN to integrate the learning component of resilience theory, the policy environment in which the initiative was operationalised, placed impediments in the realisation of a robust vision of learning. Section 6.4.1 argued how the participation that took place through the Shared Learning Dialogue process was largely 'functional'. This was because, first, these meetings were used to validate, ratify and suggest amendments to plans formulated as opposed to being platforms for the genuine garnering of fresh perspectives. Second, agendas for the SLDs were prepared in advance (by the organisation convening them-GEAG or TARU) and tightly adhered to-in essence, defining the scope of the discussion. Third, most of the SLDs took place in meetings of the City Advisory Committee (CAC) and section 6.4.1 demonstrated that participation within the CAC was fractured as entry to it was limited to largely voices of agreement.

As result of these problems in the structure and operation SLDs, a more curtailed form of ‘learning’ took place in the resilience-building initiative.

The problems evidenced in the integration of the learning component of resilience theory in an operational initiative are indicative of certain broader gaps in resilience thinking as it applies to complex settings. First, findings in this section echo arguments made by the likes of Leach (2008) who posit that resilience has an incremental vision of change. Therefore, even though SLDs sought to introduce a new ‘mechanism’ of decision-making, deliberation and learning it was not designed to engage with the structural problems (e.g. inequities of power as evidenced in agenda setting) that may inhibit these processes. Second, these findings are once again indicative of a gap in understanding the degree of compatibility between tenets of resilience and institutional practice/organisational cultures (Garschagen 2013). Genuine triple loop learning through the inclusion of fresh knowledge would require a change in organisational structures so as to make way for new policy actors with novel perspectives to participate in decision-making and problem solving. And, as observed earlier in section 7.1.3, ex-ante organisational change is notoriously difficult achieve (ibid).

## 7.2 In What Ways do Initiatives to Build Climate Change Resilience Interact with the Urban Policy Environments in Which they Unfold?

The preceding section drew on Chapters 4,5 and 6 to identify the dynamics of how actors, networks and spaces came together in different configurations to influence the manner in which an initiative build climate change resilience unfolded. It demonstrated the impediments that the politics of policy contexts placed in the path of resilience. This section will now attempt to categorically answer the research questions that were outlined in section 2.1. In doing so it will seek to distil findings that hold wider implications for the design and implementation of resilience-building policies. This section will begin by examining broad insights into the interaction of policy environments with resilience building initiatives.

Section 7.1 through its analysis of the mechanisms and gaps in the operationalisation of resilience, encapsulated the seminal influence that power and politics have on this process. The eight illustrations of the manner in which tenets of resilience are influenced by various elements of the policy process are essentially, illustrations of the

way in which politics and power have a determining influence on resilience building initiatives. In some cases this was ‘explicit’ where existing political arrangements came into conflict with this exogenously induced policy process to build climate change resilience. This was seen through the manner in which the ACCCRN’s attempts at building ‘redundancy’ in water supply systems by encouraging water harvesting threatened existing patron-client networks in Indore. This destabilisation of entrenched, powerful actors in local policy settings in turn threatened the sustainability and impact of the resilience initiative (see section 7.1.5). In certain cases, the influence of politics and power was more nuanced. This was seen through the manner in which the ACCCRN opened up new spaces for participation, but the nature of participation within these was fractured due to organisational cultures as well as the ‘performance’ of development as a project (see section 7.1.4). As some of the forthcoming sections will seek to demonstrate, each of the three main chapters of this thesis (Discourses, Actors and Networks and Policy Spaces) are at their core, an exploration of the dynamic interaction between resilience, power and politics.

As such, this set of findings amplify an expanding critique of resilience as a concept that must engage more strongly with issues of politics and power in order to be useful. Very briefly encapsulating what has been discussed earlier in this chapter as well as through the thesis, it is clear that the findings resonate with a number of theorists who argue that resilience has a ‘technocratic understanding of change’ (Kuhlicke 2010, Swanstrom 2008, Cannon and Muller-Mahn 2010, Jasonoff 2008, Turner 2008, Leach 2008). Common to the writings of these theorists is that resilience, in its current form, is strongly ‘functionalist’ in its understanding of the challenges that people face and does not adequately acknowledge the inherent political complexity in issues of managing risk. As such, resilience also faces the charge of embodying a vision of change that is ‘incremental’ (Leach 2008). The preceding sections have demonstrated this in a number of different ways, taking one example, section 7.1.4 argued that to build a systems perspective the resilience initiative established participatory spaces but did not engage with the structural impediments for the participation of representatives from the ‘full fabric’ of the community (especially its most marginalised voices).

Another critique of resilience is that, in crossing over from a concept considered mainly in the natural sciences such as ecology to social contexts, resilience loses some of its

tenability as a construct to understand and prepare for change in dynamic social settings (Turner 2008, Ernston et. al. 2010, Cannon Mueller-Mahn 2010, Leichenko 2011, Swanstrom 2008, Boyden and Cooper 2006). Resilience seems to couple environmental and human systems too simplistically and imposes a rationality incongruent with the complex reality of how socio-economic issues combine with ecological systems. In resilience thinking, there is also a tendency to ignore individuals, their relationships and their social systems. This too is evident in many different parts of the argument presented in thesis and is typified in ACCCRN's problematic encounters with political actors and networks (as seen in sections 7.1.4 and 7.1.5 in this chapter).

Finally, there is a growing concern about the dearth of research on how compatible the ideas of governance embodied in resilience are with institutional/governance structures in various parts of the world (Garschagen 2013, Boyd et. al. 2008, Béné et. al. 2012, da Silva et. al. 2012, Chelleri 2012). The preceding chapters capture diverse explorations of this, one example was summarised in section 7.1.8 where the organisational barriers that make genuine organisation learning (a key tenet of resilience) difficult were discussed.

In empirically demonstrating the ways in which issues of power and politics are important to policy processes aimed at building resilience, this thesis contests the earlier generation of policy process models that understood policy making to be a rational and linear process. Section 3.2.1 and 3.2.4 trace the evolution of policy process models from those that harboured a simplistic understanding of policy change (e.g. Lindblom 1959) as a sum of rational steps to those that understood policies to result from the dynamic interaction of discourses, actors, agendas and spaces (e.g. Keeley and Scoones 2003). When viewed from this lens, each of the 3 main chapters of this research is an argument for a wider acceptance of the understanding that, far from being a straightforward and 'aseptic' process, policy making results from the complex interface of narratives that attempt to frame policy issues, individuals and groups to whom these narratives are attached within particular, geographical and conceptual decision-making spaces.

Apart from buttressing existing theories, the findings presented in this thesis extend these to also demonstrate that policy environments and policy issues such as ‘resilience’ influence each other in continuous, complex and iterative cycles. More specifically, not only do various elements of the policy environment influence the policy issue in question but the policy issue alters and influences the very policy environment in which it unfolds. Here are three illustrations that provide evidence of such iterative interactions. First, stemming from its inherent links with systems thinking and complexity (see section 3.1.6), the resilience initiative influenced the policy environment of cities such as Gorakhpur and Indore by fostering the coming together of policy actors who had hitherto never collaborated with each other in decision-making processes. As these policy environments were compartmentalised (see section 4.3.3), conflict between policy actors erupted as they approached the same policy issue with very different norms, values, worldviews and knowledge systems. This had to then be ‘managed’ by isolating parties with views contrary to the majority which in turn led to the realisation of a more curtailed vision of systems thinking in this resilience initiative. Thus, policy issues (i.e. resilience) induced change in the policy environment (i.e. collaboration) but the policy environment also influenced the policy issue in turn (i.e. through curtailing the vision of systems thinking).

Second, Chapter 5 explored the manner in which the ACCCRN influenced webs of power in local policy contexts such as that of Maheva, Gorakhpur by enhancing the agency of residents who attached themselves to the initiative as volunteers (see section 5.2.4). This shift in power threatened the dominant position of the locally elected politician (Maheva’s representative to the Municipal Corporation) as a result of which he harboured a very negative attitude towards the resilience initiative. The estrangement of this vital policy actor threatened the sustainability and tenability of the resilience initiative in turn. Thus, the resilience initiative influenced the local policy context by enhancing the agency of certain policy actors but the resultant threat to other important actors in the policy context carried the potential to negatively influence the resilience initiative<sup>134</sup>.

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<sup>134</sup> Carmin et. al. (2012:27) in their analysis of institutional processes that led to the consolidation of climate change adaptation plans in Quito also note the critical importance such policy actors in “...important condition for generating ownership and success in the climate adaptation arena.”

Third, Chapter 4 examined the manner in which resilience influenced the policy setting by bringing a number of new discourses, including one that attributed high priority to hydro-meteorological issues. The chapter went on to discuss the manner in which these were in contrast to endogenous priorities of residents of local policy contexts such as Maheva, Gorakhpur that led to scepticism and resistance from communities (see section 4.4.1). This in turn influenced the resilience initiative as additional time and resources had to be devoted to securing community ‘buy in’.

Therefore, as noted earlier too, these findings demonstrate that policy contexts are not empty vessels into which new policy issues can be unproblematically inserted. They shape policy issues that they interact with and are shaped by policy issues in turn.

#### 7.2.1 How do Different Elements of the Policy Environment Influence Resilience-Building Initiatives?

Chapters 4, 5 and 6 sought to answer this question by breaking down the policy environment into its constituent elements-discourses, actors/networks and spaces.

Starting with discourses, Chapter 4 argued that policy environments have a proliferation of existing discourses not all of which are congruent with those that are attached to ‘Resilience Thinking’. It was analysed how the resilience initiative brought exogenous discourses around engaging with hydro-meteorological problems and climate impacts; dealing with surprises and planning for an uncertain future; and a focus on ‘systems thinking’ that was manifested as collaboration between different policy actors. These discourses were dissonant with a number of discourses that were already in circulation in the policy contexts. These included discourses that highlighted a range of other problems with no ostensible link to climate change; another that attributed high importance to present contingencies; and a discourse that privileged a compartmentalised mode of bureaucratic functioning. This ‘dissonance’ had a tangible impact on the resilience building initiative as a clash between the initiative’s focus on climate impacts and a pre-existing set of priorities in the policy context with no link to climate change led to problems with securing the support of communities who were the intended beneficiaries of the ACCCRN. The tension between the project’s narrative on preparing for an uncertain future and the pre-existing, sharp focus on present problems led to many interventions taking place under the aegis of this resilience initiative to

resemble disaster risk reduction interventions (see section 3.1.5 for the difference between the two). And finally, the divergence between the project's orientation towards systems thinking and the existing, compartmentalised mode of governance led to the fractured participation from ULBs.

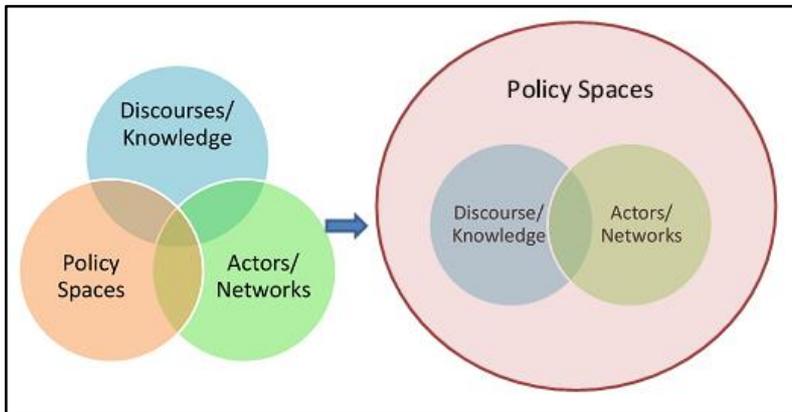
After examining the material impact that discourses prevalent in the policy setting had on the resilience initiative, the thesis in Chapter 5 went onto explore the role and influence of actors/networks. This chapter, first understood the functioning of actors/networks, epistemic communities, policy entrepreneurs and policy intermediaries; it then explicated the way in which actors/networks helped circulate the discourses around resilience that the ACCCRN sought to perpetuate. For example, in studying the role of actor-networks, this chapter analysed the manner in which volunteers recruited by the ACCCRN in local policy settings such as Maheva, Gorakhpur were essentially 'nodes' through which a global, exogenous discourse on climate change resilience started to circulate at the community level. Taking one more example, the chapter analysed how another important actor-the 'policy intermediary' was responsible for inserting an international narrative about engaging with climate change into local policy processes. Therefore, this element of the policy environment (i.e. actors/networks) acted as a mechanism that extended the amorphous concept of 'resilience thinking' a foothold in operational, policy contexts. Even as certain actors/networks were working to help embed the resilience initiative in particular contexts, they had contests with each other and also faced varied countervailing forces. These political interactions also shaped the resilience initiative. For instance, the chapter explored how existing networks of patronage in policy settings posed as a barrier to actor-networks (and their attendant discourses) that the resilience initiative was attempting to induce. This directly impacted the sustainability prospects of the resilience initiative<sup>135</sup>. Similarly, the chapter also examined how international actors/networks and those operating within cities sometimes developed different conceptualisations of resilience. This tension exacerbated the mismatch between assumptions carried by the resilience initiative and the reality of its operational context;

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<sup>135</sup>Pelling (2011:398) writing about urban disaster risk reduction in the Caribbean demonstrates the difficulty of sustaining activities in the absence of local government support and that a "...lack of active support and official recognition was sufficient for local actors to feel a lack of legitimacy and to constrain their own actions."

this then influenced the efficacy of the initiative itself (refer to section 5.3.3 for a discussion on this). Overall, actors, networks were responsible for coupling the resilience concept with its operational environments thereby defining the shape, nature and effectiveness of the ACCCRN.

Policy spaces are the third element of the policy environment that are scrutinised by this thesis and it is clear that they had a seminal influence on the way in which the resilience initiative unfolded. First, as noted in Chapter 6, these were the theatres where discourses accompanying the resilience initiative interacted with those that were already



**Figure 12 Progression in understanding policy environments**

in circulation in the policy setting. These were also platforms on which different sets of actors/networks engaged and interacted with one another. Moreover, policy spaces were the interface between different discourses and sets of actors that

adopted or opposed them. The impact of discourses and actors/networks has already been demonstrated in the two preceding paragraphs and in essentially being the 'frame' within which the influence of these two other elements was elicited-the influence of spaces on the resilience initiative becomes apparent. As such, even though this doctoral project began with a conceptual framework that considered the policy environment as a sum of three overlapping constituent parts, after analysis it becomes evident that this needs to be reformulated to be seen as a sum of actors and discourses interacting within these 'policy spaces' (see diagram). The preceding sections carry ample evidence of the manner in which spaces had a direct impact on the nature of the resilience building initiative. For instance, it was the structure of one such space-the community meeting, where exogenous priorities attached to the resilience discourse led to the setting of an agenda that sometimes excluded matters of importance to those that the project was aiming to benefit. This led to problems of 'buy-in' from community members (a key tenet of resilience) that in turn placed obstacles for the initiative to meet its objective

(see discussion in 6.1.4). Taking another example from a different scale of the initiative's governance, it is seen that the construction of the City Advisory Committee as a space that largely included voices of agreement led to a diluted vision of 'learning' (a key tenet of resilience thinking as explored in section 7.1.8) being realised within the ACCCRN. At yet an even higher scale, international workshops and meetings convened by the Rockefeller Foundation and its allies were structured as 'invited spaces' where the parameters of discussion were defined. Those participating in these spaces were at times, presented with 'frameworks' and 'procedures' to be followed that limited the agency of those executing the projects which contributed to the dissonance between the assumptions attached to the resilience concept and the reality of its operational contexts.

In essence, these examples demonstrate the paramount importance of understanding the vital role that 'spaces' play in the manner in which resilience unfolds in policy contexts. The design of these spaces then becomes critically important to the success of any initiative to build climate change resilience.

#### 7.2.2 What is the Influence of Resilience Thinking on Policy Environments in Developing Countries?

After having examined the manner in which different elements of the policy environment influenced the resilience initiative; this section attempted to distil an understanding of how climate change resilience as a policy issue influences the politics of a policy process.

First, section 3.1.6 has attempted to demonstrate the conceptual links between 'complexity', systems thinking and resilience. Following on from this, a number of sections have attempted to illustrate the manner in which this conceptual tenet was then embodied in an operational initiative. For instance, section 4.1.3 and then section 7.1.1 argues that one way in which the vision of 'systems thinking' was realised in the policy context by the ACCCRN was through the inclusion of a wide array of voices in decision-making processes. Earlier on in the thesis, there was a discussion on how a number of people closely engaged with the ACCCRN and familiar with the policy context of Gorakhpur and Indore posited that this was a novel attribute of the resilience building initiative. Never before had they seen actors from such different sectors,

departments and epistemic cultures coming together to deliberate over the same policy issue. Therefore, it seems clear that climate change resilience, as a result of its conceptual underpinnings, is leading to the participation of an expanded constellation of policy actors. This increased diversity then throws up opportunities (e.g. more knowledge) and challenges (e.g. potential conflict) for policy-making processes that have been explored through this thesis.

Second, closely related to this point is a finding around the relationship between participation of the poor/vulnerable in policy-making and processes of building climate change resilience. Section 3.1.2 and then 7.1.4 encapsulated the manner in which community engagement and local knowledge were a key theoretical tenet of resilience thinking. This then contributed to the opening of opportunities within the ACCCRN for the vulnerable communities to partake in the design of modalities of building resilience to climate impacts. As argued in Chapter 6, in areas such as Maheva, Gorakhpur the ACCCRN was the first instance of the community coming together to shape a major policy intervention. This leads to an understanding of how resilience is seen to bring increased opportunities for the poor to participate in policy processes. Even though resilience induces the ‘opening’ of such spaces, section 6.5 demonstrates how the nature of participation within these is fractured due to the very nature of resilience thinking itself. Resilience with its assumptions on systems thinking and complexity is not a concept that is easily diffused or operationalised, therefore agency is acceded to those seen to have ‘expertise’ at the cost of more democratic processes. Therefore, resilience is leading to the enhanced participation of the poor in important policy processes but the ‘quality’ of participation remains a challenge.

Third, apart from enhancing the diversity of policy actors and expanding the opportunities for the participation of the poor, climate change resilience is bringing additional dynamics into the politics of policy processes by getting policy makers to engage with ‘uncertainty’. Section 4.1.2 and then 7.1.3 summarised the manner in which planning for an uncertain future and for surprise was one of the key discourses that accompanied the ACCCRN into the policy settings. It introduced a new way of conceptualising, considering and acting upon development deficits in policy environments that were typified by a focus on engaging with present contingencies. This said, there were limits to the degree to which resilience as a policy issue was able

to orient the policy environment towards the future (seen, for instance, through a discussion in section 4.4.3 on how many of the interventions taking place under aegis of this resilience initiative resembled disaster risk reduction activities instead). These problems of getting policy actors to engage with the future arose as there are gaps in understanding the political incentives for mobilising key policy actors such as ULBs and local politicians around issues that are likely to pay dividends in the unforeseen future (Martins and Ferreira 2011, Roberts 2008). Therefore, one of the core tenets of resilience-‘preparing for uncertainty’ adds to the politics of policy processes by carrying the inherent potential to alienate key policy actors.

### 7.2.3 What do Urban Contexts Add to the Interaction Between Climate Change Resilience Initiatives and Policy Environments?

Apart from ‘resilience’, in the conclusion of this thesis, it would also be instructive to understand what ‘urban contexts’ are bringing to the politics of a climate change resilience policy process.

First, it has been discussed in a number of preceding sections that resilience was conceptually married to the idea of ‘complexity’ and of ‘systems thinking’. This required the collaboration between individuals with knowledge of different parts of the city system (and most of all between different Government departments and agencies). On the other hand, as section 4.5 and then 7.1.1 examined, urban contexts in developing countries are understood to be highly compartmentalised and fragmented (Mukhopadhyaya et. al. 2000). Taking India as an example, the office of District Magistrate is the nodal administrative entity through which most if not all development initiatives are delivered in rural areas (Arora and Goyal 2011). Urban areas, on the other hand, are witness to the proliferation of parastatal agencies and ULBs that individually engage with sectors relevant to building resilience but work in isolation. Therefore, this compartmentalised mode of Governance in urban contexts then throws up unique challenges for ‘systems thinking’ necessary for building resilience.

Second, in section 3.1.3, it was seen how the conceptual weakness of resilience includes problems around the manner in which resilience for one group may erode resilience for another; how defining the risk against which resilience must be deployed is predicated on individual values; and how the “point of view” is critical to determining/shaping

resilience concepts (Leach 2008, Berkhout 2008, and Boyden and Cooper 2006). Due to the high density of settlement patterns in populous and poorly regulated informal settlements, the critical question of ‘resilience for whom?’ is markedly accentuated. Section 7.1.2 captured a poignant example of this dynamic when it demonstrated how one group of residents in Maheva had enhanced their resilience by building boundary walls around their compound, which led the flood waters to neatly flow past their houses and into those inhabited by the residents who could not afford such walls—thereby, exacerbating their vulnerability. Therefore, in this way urban policy contexts pose additional challenges around negotiating trade-offs in processes of building resilience.

Third, sections 3.1.2 and then 7.1.4 analysed the way in which community engagement and the incorporation of indigenous knowledge is a key tenet of resilience thinking. In the ACCCRN, this tenet was operationalised through an emphasis on ‘community participation’ through surveys but more so through community meetings that employed a range of tools/methodologies for soliciting participation. Yet, the demographics of urban areas themselves were seen to pose particular challenges to the successful operation of these participatory tools and methodologies. This was because these require a certain degree of social cohesion in order to deliver effective results and the contexts within which the ACCCRN was unfolding suffered from a marked deficit of this due to issues such as high rates of in and out migration (Korf 2002). Also, as seen in section 6.5, the success of many of these tools is predicated on the devotion of large amounts of time from those participating and the schedules/livelihood patterns of urban communities pose real impediments for this. Therefore, urban contexts pose problems for processes of building resilience through the challenges of securing community engagement and appropriating local knowledge in towns and cities.

Fourth, there is a growing understanding of how resilience is a sophisticated concept but one that faces difficulties of diffusion in operational contexts (Klein 2003). These challenges of ‘diffusion’ are sharper in urban contexts due to prevailing intellectual cultures. Leichenko (2011) argues that cities are sites where intellectual capital is agglomerated (evidenced, for instance, by the presence of universities, research centres, think tanks and ‘experts’) and as such, they have distinct epistemic and intellectual cultures. This leads to a proliferation of interpretations of what resilience is and how it

can be operationalised that sometimes results in contests and conflicts between policy actors who approach this heuristic from their own epistemic standpoints (See section 5.4 for more detail). Chapter 5 explored a number of these contests and also explored their link to varying interpretations of resilience. Therefore, it is possible to argue that the diffusion of an exogenous discourse on resilience is more problematic in the urban as compared to rural areas that do not have intellectual milieus that are as vibrant.

#### 7.2.4 How Can a Greater Understanding of the Politics of Policy Processes Make Climate Change Resilience Initiatives More Robust?

These findings about the manner in initiatives to build resilience interact with the policy process contexts in which they unfold hold certain implications for those attempting to deploy resilience to reduce the vulnerability of those suffering from climate impacts.

Using the three conceptual pillars of this research, we see that the findings on ‘discourses’ lead to a few interesting insights. Chapter 4 demonstrated how resilience was a discourse that was exogenous to the local policy context in which it unfolded. It went onto explore how many of the assumptions that accompanied this discourse were dissonant with discourses already in circulation in local policy contexts and that their clash had unhelpful consequences for the success of the ACCCRN initiative. This leads to an insight about the need for those designing and implementing resilience initiatives to find modalities of coupling ‘resilience thinking’ with local narratives. For example, the dissonance between the emphasis laid by the resilience on ‘uncertainty’ and ‘future changes’ with the prevailing focus on dealing with present contingencies could have been dulled by better explaining the immediate benefits of particular resilience interventions to key policy actors or by tackling immediate community concerns as a first step in a broader vulnerability reduction plan. In this way findings resonate with the importance of inserting an external knowledge on climate change at the community level but not at the cost of the more immediate concerns of the community (Van Aalst et. al. 2008, Dodmant and Mitlin 2011).

This is inherently tied to a second implication that findings on discourses hold. The insertion of resilience thinking with its novel perspectives on governance and public management into policy environments will have unforeseen consequences. The surmounting of these unexpected obstacles will then need the devotion of appropriate time and resources. This underlines the importance of critically evaluating the appropriateness

of delivering resilience in the format of ‘development projects’ with their tight timelines, deliverables and need for demonstrable impact<sup>136</sup>. For example, drawing on conceptual tenets of resilience thinking to bring together a diversity of viewpoints in decision-making processes led to unanticipated conflict. Maintaining the integrity of the resilience concept by managing the conflict would require flexibility in timelines and project protocols.

The chapter on ‘actors’ that examined the interaction of different actors/networks with resilience as well as contests and conflict between them too shows some directions to be followed by those aiming to formulate effective interventions to build resilience to climate change. The chapter, through the analysis it presented, attempted to demonstrate how robust policies result from understanding and building upon the motivations of relevant policy actors. Much of the problem that the ACCCRN had in engaging with political actors stemmed from imprecisely mapping their incentives or more accurately, their ‘disincentives’ for supporting the initiative in their localities. A more careful strategy of engagement with the corporator in contexts such as Maheva, Gorakhpur could have led to the team implementing ACCCRN securing his backing. Even though this is conjecture, one of the components of such a strategy could entail presenting the corporator as the person responsible for bringing the ACCCRN and its intended benefits into the neighbourhood, while simultaneously also reaching out to the residents directly. This would lead to the consolidation of a certain political capital for the corporator, remove the ‘threat’ that the initiative presented to him and adequately incentivise his support for institutionalising the ACCCRN at the community level. As resilience is an issue with very little precedence of interaction with policy contexts (that, as the preceding chapters have demonstrated, are shot through with dynamics of politics and power) understanding these incentives will not be straightforward and will require iteration, experimentation, testing and recalibration-this ties into the point about the need for flexibility and adaptability in the management of resilience building processes. Closely related to this point is one around the importance of perceiving policy actors as individuals and groups/networks/organisation as agglomerations of individuals-each with their own worldviews, epistemic backgrounds, priorities and consequently incentives. Section 5.4 discussed the manner in which it was the actions and relationships of particular individuals that propelled the initiative forward and influenced

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<sup>136</sup> Bul-Kamanga et. al. (2003: 201) note that “...funders like simple, discrete projects,” and so it is not easy to get support for projects “...which are cross-disciplinary, involving many agencies and integrating many components (what are often referred to disparagingly by international agencies as “Christmas tree projects” because they have so many different components).”

various dimensions of the ACCCRN- from the cities that were selected by the Rockefeller Foundation for the initiative to individual community leaders who mediated access to residents of neighbourhoods where resilience building interventions were to take place.

Finally, just as with findings around discourses and actors, those on ‘spaces’ too suggest directions that would pave the way for a more robust vision of resilience to be realised to help the vulnerable deal with climate impacts. The evidence presented in this thesis overwhelmingly points towards the need to acknowledge that multiple interpretations of resilience can co-exist. Instead of establishing spaces that sacrifice these manifold narratives for the sake of maintaining the integrity of a prototype, ‘meta-narrative’ of resilience, spaces must be more tolerant of diversity. As discussed in sections 6.2.1 and 6.2.3, many problems within ACCCRN surfaced as a result of spaces being designed so as to constrain the breadth of discussion and control priorities for action. Taking one example, the occasional side lining of endogenous narratives of resilience that required an engagement with issues that were not originally part of a broader discourse on the topic alienated constituencies that were important to the success of the ACCCRN. Such impediments could have been overcome by paying closer attention to the design of spaces for evaluating the alternative interpretations of resilience within the realities of their individual policy contexts. In essence, there is an urgent need to accommodate, appropriate and celebrate the different ways in which the core tenets of resilience thinking are interpreted and internalised by a variety of actors to help reduce the vulnerability of those on the frontlines of the battle against climate change.

At the end of this thesis, it is useful to briefly reiterate the contribution to knowledge that this work makes.

As discussed at the beginning of this thesis (section 2.4), it is widely acknowledged that resilience has largely been explored in northern contexts and as such there is a lack of understanding around how it can engage with problems of developing countries. Moreover, there is an imbalance between explorations of resilience thinking in rural and urban contexts in favour of the former. This research by locating itself in urban areas of a developing country such as India fills these gaps in knowledge.

More importantly, this research project is one of very few studies that scrutinise an operational initiative to build resilience to climate change impacts using secondary as well as primary data. As such, it brings a novel understanding of what happens when the conceptually elegant notion of resilience thinking meets complex policy environments such as those found in urban contexts of developing countries. These findings are then also a contribution to enhancing our understanding of how the ‘theory’ of resilience can be best employed to help vulnerable populations deal with the shocks and stresses of a changing climate.

A crucial part of this process is the manner in which the thesis employs empirical data to demonstrate the influence of power and politics in processes of building resilience. This not only adds rigour to a small and largely conceptual critique of resilience thinking, it also catalogues the tangible repercussions of adopting a techno-managerial approach to implementing resilience policies. As such,, the thesis then also marks a progression from an understanding of resilience that is largely functional to one that examines its relevance in settings with multifaceted social and political dimensions.

Importantly however, while the research adopts a critically analytical lens to demonstrate the fissures in resilience thinking and the manner of its application to deal with climate impacts, it does not support a rejection of the concept. Instead it is a clarion call for reimagining resilience, so that it can be employed more effectively to combat the exigencies of a changing climate, in some of the world’s most vulnerable contexts.

## Appendix 1-Select Demographics Maheva, Gorakhpur

Maheva: Maheva is an aggregation of 6 localities-Galan, Transport Nagar, New Maheva, Chhota Maheva, Bada Maheva and Chakra Awwal. A household survey conducted with a 1000 respondents in Maheva sheds light on key demographics.

**A) Caste composition:** New Maheva and Transport Nagar have a significantly lower percentage of the Nishad (the dominant caste group in Maheva) community as compared to other localities-

Caste	Name of Locality					
	Chakra Awwal	Chhota Mahewa	New Mahewa	Galena	Bada Mahewa	Transport Nagar
Nishad	68.1%	62.6%	9.4%	36.9%	71.1%	17.7%

**B) Income:** there is a fair amount of variation in income levels between the three mohallas, with residents of New Maheva earning the most-

Locality	Total income of family ( in Rs)
Chakra Awwal	4075.94
Chhota mahewa	3183.95
New mahewa	9683.49
Galena	4810.71
Bada mahewa	5955.22
Transport Nagar	6971.16

**C) Toilet Facilities:** Chakra and New Maheva reported very low toilet facilities as compared to the other localities.

Locality	Yes
Chakra Awwal	12.3%
Chhota Maheva	16.3%
New Maheva	91.5%
Galan	59.5%
Bada Maheva	51.7%
Transport Nagar	67.4%

**D) Education levels:** Chalkra Awwal, Chhota Maheva and Bada Maheva reported the lowest levels of education

	Chakra Awwal	Chhota Maheva	New Maheva	Galan	Bada Maheva	Trans. Nagar
	27%	26%	4%	8%	21%	15%

## Appendix 2- Sample Questionnaire

### Introduction

1. Can you tell me a little bit about your involvement with the ACCCRN?
  - a. What was the nature of guidelines/instructions/Terms of Reference that you received at the beginning of your engagement with the project?
  - b. What were the exact points at which you were engaged with the process?
2. Can you tell me a little bit about the history of the ACCCRN process?
  - a. I.e. what were its different stages?
  - b. Which actors were involved at which stage?
3. What, in your opinion, are the three big achievements of the ACCCRN process?
4. What, in your opinion, are the three biggest challenges that the ACCCRN has faced?
5. Who are the key players/stakeholders that I should meet with?
6. What is your understanding of CC resilience?
7. What is your understanding of CC adaptation?

### A

1. Can you tell me a little bit about the shared learning dialogue process?
2. Is this, in your opinion, a new policy/decision-making space?
3. How did the SLD as a policy and decision making space come to be?
  - a. Was it a process of reaching out to government bodies, raising their awareness and then asking for an opening up of the policy making space?
  - b. What was the initial reaction of the government (as seen through \various civic bodies)? If there was resistance, then how did this manifest itself and what actions were undertaken to overcome this.
4. Can you tell me if you see a connection between the Climate Change issue and the SLDs as a policy space? (i.e. do you think it is only through a convergence in the actions of various stakeholders that a broad issue such as climate change can be dealt with?)
  - a. At what points in the ACCCRN process were these SLDs employed?
5. What are some of the other policy and decision making spaces in which the ACCCRN developed? (closed meetings of your organisation, meetings convened by ISET and the Rockefeller Foundation, etc.)
  - a. What were the types of decisions that were taken in these?
  - b. How in your opinion did these spaces come to be?

6. Could you tell me, what in your opinion, are the types of decisions that are taken at the international level, at the national level, at the city level and at the household level?
7. How, if at all, has the ACCCRN process led to the ordinary citizen feeding into city level policy?
  - a. If they have, would you say that this is unique to policies associated with the ACCCRN?
  - b. What is the level of citizen engagement in policies around other issues? (Eg. water supply, disaster management etc.)

## **B**

1. Who, in your opinion, are the key actors and stakeholders in the ACCCRN process?
  - a. Can these be clubbed into broad groups or categories?
  - b. If so, do you think that these groups can be seen to share, to a certain extent, opinions, approaches, ideologies and have similar objectives that are distinct from other groups?
2. How do these different groups of actors influence the policy process around the ACCCRN?
  - a. Do they bring particular expertise and add to discussions?
3. What in your opinion are the incentives for each of these different actors in being involved in the policy-making process?
4. Are some of them more influential than others in the policy process?
  - a. In what way is this influence manifested?
    - i. Do they set the agenda?
    - ii. Do they emerge influential in key decision-making meetings?
    - iii. Do they set the pace, guide the process and move it along?
  - b. Are there particular individuals which are seen as opinion leaders?
5. Would it be fair to say that due to the nature of the climate change problem, more actors have become involved in the policy processes around the ACCCRN?
  - a. In your opinion and experience, is this different to policy processes around other issues?
  - b. How and why are these disparate actors interested in CC issues?
6. In your opinion, to what extent has the climate change issue led to new actors (individuals or organisations) getting a space on the policy making table? (I.e. do you think that research institutions would usually be a part of decision making processes in which the Municipal Corporation is also involved)
  - a. Also, do you think that the nature of the climate change problem has led to certain actors getting more importance than others? (*If interviewee is unclear then-perhaps, the met department is being listened to with more attention than usual? Perhaps, professors from the Gorakhpur University are shaping action more than they usually do? Maybe, NGOs with*

experience in engaging with environmental issues are being looked at to lead the process?)

7. Did party politics manifest itself at any time during the ACCCRN process?
  - a. Was the role and participation of elected officials in processes associated with the ACCCRN markedly different in any way to others (example, did they represent the concerns of their constituencies in meetings)?

## C

1. How, in your opinion, are policies made or changed? (*If interviewee is unclear then-* do you think that policy change is sum of small steps? Is it a process with a number of clear steps that are systematically achieved? Is it a process that is to do with tackling mental models of various individuals)
  - a. How do you think view of yours manifested itself in the policy making processes associated with the ACCCRN? (*If interviewee is unclear then-* if you believed that policy change occurs only once people's mental models are dealt with then perhaps you spent a large part of your time raising awareness and convincing people; if you believed that those executing the policy at the street level was pivotal to any process of policy change then perhaps you not only involved managers but implementers too.)
2. In your opinion, what new ways of thinking and doing has CC brought to the policy making environment? (*If interviewee is unclear then-* for the first time, citizen's participation is being solicited in policy processes ostensibly around civic issues; similarly what issues would you highlight?)
3. In your opinion did different people engaged in the policy process carry different points of view of the climate change problem? Perhaps, some thought that it was a global issue which did not have much to do with the problems that they engaged with day to day whereas some understood the linkages between the local issues that they saw around them to global issues around climate change; perhaps, some saw it as purely a problem of pollution to be dealt with by individual agencies whereas others understood its cross cutting multi-sectoral nature...
  - a. How did the donor, ISET, the GEAG, the research institutions, the municipal corporation and the other actors conceptualise climate change?
  - b. Was your understanding of the CC in line with the other organisation's understanding?
  - c. Taking one or two examples, what do you think was the impact of these different world views on the decision making processes surrounding the ACCCRN was? (Did the initial process suffer as people did not buy into the process fully, or did the process take a different turn to what was initially thought?)

### **Appendix 3- Interview Respondents/Group Discussion Participants**

Mr. Ashvin Dayal, Rockefeller Foundation  
 Dr. Cristina Rumbaitis, Rockefeller Foundation  
 Ms. Fern Uennatornwarangoon, Rockefeller Foundation  
 Ms. Ana Brown, Rockefeller Foundation  
 Ms. Anju Chowdhry, Municipal Corporation of Indore  
 Mr. B.K. Bidyarthi, Gorakhpur Development Authority  
 Mr. Julian Barr, ITAD  
 Mr. Ken McClune, ISET  
 Dr. Marcus Moench, ISET  
 Mr. Dilip Singh, ISET  
 Mr. Shashi Chopde, ISET  
 Ms. Archana, GEAG  
 Mr. Irfan, GEAG  
 Mr. Satish Tripathi, GEAG  
 Ms. Pragrya Tiwari, GEAG  
 Dr. Shiraz Wajih, GEAG  
 Ms. Ekta Bartarya, GEAG  
 Dr. SS Verma, Gorakhpur University/GEAG  
 Dr. Bijay Singh, GEAG  
 Mr. Narendra Surana, CEPRD  
 Mr. Anup Karanth, TARU  
 Ms. Megha Burvey. TARU  
 Mr. P N Srivastava  
 Mr. Shafiq, Meteorological Department, Govt. of India  
 Mr. PK Lahiri,  
 Mr. Sidharth  
 Ms. Moho Chaturvedi, Verulam Associates  
 Mr. V Kulshreshtha, Municipal Corporation of Indore  
 Mr. Anil Bhandari  
 Mr. Hitendra Mehta, Mehta and Associates  
 Mr. Garg, Municipal Corporation of Indore  
 Mr. Nene  
 ACCCRN volunteers in Maheva (18)  
 Monitors/Secretaries of Water User Groups in Indore (6)  
 Residents of Maheva, Gorakhpur  
 Residents of Purdilpur, Gorakhpur  
 Residents of Ananjani Nagar, Indore  
 Residents of Lokmanya Nagar, Indore  
 Residents of Mahalaxmi Nagar, Indore  
 Residents of Rahul Gandhi Nagar, Indore

## Sources

Abercrombie, N. and S. Hill (1976). "Paternalism and PatronageAuthor." The British Journal of Sociology**27**(4): 413-429.

Adger, W. N. (2000). "Social and ecological resilience: are they related?" Progress in Human Geography**24**(3): 347-364.

Adger, W. N. (2006). "Vulnerability." Global Environmental Change**16**(3): 268-281.

Adger, W. N. and P. M. Kelly (1999). "Social Vulnerability to Climate Change and the Architecture of Entitlements." Mitigation and Adaptation Strategies for Global Change**4**(3-4): 253-266.

Adger, W. N., P. M. Kelly, et al. (2002). "Migration, remittances, livelihood trajectories, and social resilience." Ambio. 2002 June ;**31**(4):358-66.

Adler, E. and P. M. Haas (1992). "Conclusion: epistemic communities, world order, and the creation of a reflective research program." International Organization**46**(01): 367-390.

Alberti, M. and J. Marzluff (2004). "Ecological resilience in urban ecosystems: Linking urban patterns to human and ecological functions." Urban Ecosystems**7**(3): 241-265.

Alwang, J., P. Siegel, et al. (2002). Vulnerability as Viewed from Different Disciplines. International Symposium Sustaining Food Security and Managing Natural Resources in Southeast Asia- Challenges for the 21st Century. Chiang Mai, Thailand.

Arnstein, S. (1969). "A Ladder of Citizen Participation." JAIP**35**(4): 216-224.

Aronson, D. (1996). "Overview of Systems Thinking'." Retrieved 27th May, 2012, from [http://www.thinking.net/Systems\\_Thinking/OverviewSTarticle.pdf](http://www.thinking.net/Systems_Thinking/OverviewSTarticle.pdf)

Arora, R. K. and R. Goyal (2011). Indian Public Administration. New Delhi, Wishwa Prakashan.

ARUP (2009). Asian Cities Climate Change Resilience Network. ARUP.

Bahadur, A., M. Ibrahim, et al. (2010) The Resilience Renaissance. IDS SCR Working Paper

Bahadur, A. V., M. Ibrahim, et al. (2013). "Characterising resilience: unpacking the concept for tackling climate change and development." Climate and Development**5**(1): 55-65.

Barr, J., C. Albertyn, et al. (2011). Asian Cities Climate Change Resilience Network Mid Term Evaluation. UK, Verulam Associates Ltd. for Rockefeller Foundation.

Bebbington, A. (2004). Theorizing participation and institutional change: ethnography and political economy. Participation - From Tyranny to Transformation. S. Hickey and

G. Mohan. New York, Zed Books.

Bene, C., R. Wood, et al. (2012) Resilience: New Utopia or New Tyranny? Reflection about the Potentials and Limits of the Concept of Resilience in Relation to Vulnerability Reduction Programmes. IDS Working Paper**405**.

Berg, B. (1995). Qualitative research methods for the social sciences. Boston, Allyn and Bacon.

Berkes, F. (2007). "Understanding uncertainty and reducing vulnerability: lessons from resilience thinking." Natural Hazards**41**(2): 283-295.

Berkhout, F. (2008). Order In Socio-Technical Systems: The Dark Side Of Resilience. Re-framing Resilience. M. Leach. Brighton, STEPS Centre Working Paper. **13**.

Bernard H. R. (2006). Research Methods in Anthropology: Qualitative And Quantitative Approaches. Lanham, AltaMira Press.

Berry, F. and W. Berry (1999). Innovation and Diffusion Models in Policy Research. Theories of the Policy Process. P. Sabatier. Boulder, Westview Press.

Bharwani, S., P. Magnuszewski, et al. (2008). Vulnerability, adaptation and resilience: Progress toward incorporating VAR concepts into adaptive water resource management. Oxford, Stockholm Environment Institute.

Bivens, F., K. Moriarty, et al. (2009). "Transformative Education and its Potential for Changing the Lives of Children in Disempowering Contexts." IDS Bulletin**40**(1): 97-108.

Blaikie, P., T. Cannon, et al. (1994). At Risk: Natural Hazards, People's Vulnerability and Disasters. London, Taylor & Francis.

Bourdieu, P. (1962). The Algerians. Boston, Beacon Press.

Bourdieu, P. (1977). Outline of a theory of practice. Cambridge, Cambridge University Press.

Boyden, J. and E. Cooper (2007). Questioning the Power of Resilience: Are Children Up To the Task of Disrupting the Transmission of Poverty? CPRC Working Paper **73**. Oxford, Department of International Development Queen Elizabeth House, University of Oxford.

Breen, P. and J. Anderies (2011). Resilience: A Literature Review. USA, CUNY & Arizona State University.

Briguglio, L., G. Cordina, et al. (2008). Economic Vulnerability and Resilience, UNU WIDER. Research Paper No. **2008/55**.

Brock, K., A. Cornwall, et al. (2001). Power, Knowledge and Political Spaces in the Framing of Policy. Brighton, Institute of Development Studies Working Paper 143.

Brooks, N. (2003). *Vulnerability, risk and adaptation: A conceptual framework*. Norwich, Tyndall Centre Working Paper.

Brooks, N., W. Neil Adger, et al. (2005). "The determinants of vulnerability and adaptive capacity at the national level and the implications for adaptation." *Global Environmental Change***15**(2): 151-163.

Brown, A., A. Dayal, et al. (2012). "From practice to theory: emerging lessons from Asia for building urban climate change resilience." *Environment and Urbanization***24**(2): 531-556.

Bruneau, M., S. E. Chang, et al. (2003). "A Framework to Quantitatively Assess and Enhance the Seismic Resilience of Communities." *Earthquake Spectra***19**(4): 733-752.

Bruneau, M. and A. Reinhorn (2006). Overview of the Resilience Concept. *Proceedings of the 8th U.S. National Conference on Earthquake Engineering*. San Francisco, California. **Paper No. 2040**.

Bryman, A. (2001). *Social research methods*, Oxford, Oxford University Press, Incorporated.

Bryman, A. (2004). *Social research methods*, Oxford, Oxford University Press, Incorporated.

Bulkeley, H. and V. Castán Broto "Government by experiment? Global cities and the governing of climate change." *Transactions of the Institute of British Geographers*: 10<sup>th</sup> July 2012.

Bull-Kamanga, L., K. Diagne, et al. (2003). "From everyday hazards to disasters: the accumulation of risk in urban areas." *Environment and Urbanization***15**(1): 193-204.

Burton, I., S. Huq, et al. (2002). "From impacts assessment to adaptation priorities: the shaping of adaptation policy." *Climate Policy***2**(23): 145-159.

Cannon, T. (2000). *Vulnerability Analysis and Disasters. Floods*. D. Parker. UK, Routledge.

Cannon, T. (2008 ). *Reducing People's Vulnerability to Natural Hazards: Communities and Resilience* *WIDER Research Paper* UNU-WIDER **2008/34**

Cannon, T. and D. Muller-Mahn (2012). "Vulnerability, resilience and development discourses in context of climate change." *Natural Hazards***55**(3): 621-635.

Carmin, J., I. Anguelovski, et al. (2012). "Urban Climate Adaptation in the Global South: Planning in an Emerging Policy Domain." *Journal of Planning Education and Research*. 2<sup>nd</sup> October 2010

Carpenter, S., B. Walker, et al. (2001). "From Metaphor to Measurement: Resilience of What to What?" *Ecosystems***4**(8): 765-781.

Central Intelligence Agency (CIA) (2010). "World Factbook India ". Retrieved 20th May, 2010, from <https://www.cia.gov/library/publications//the-world-factbook/geos/in.html>.

Chamaraj, K. (2009). "Parastatals and task forces: the new decision-makers." Retrieved 23rd March 2013, from <http://www.indiatogether.org/2009/feb/gov-parastate.htm>

Chambers, R. (1983). Rural development: putting the last first. Essex, Longman.

Chambers, R. (1989). Vulnerability: How the Poor Cope, Brighton, Institute of Development Studies.

Chelleri, L. (2012). "From the Resilient City to Urban Resilience. A review essay on understanding and integrating the resilience perspective for urban systems." Documents d'Anàlisi Geogràfica**58**: 287-306.

CIA (2010). "World Factbook India." Retrieved 19th May, 2011, from <https://www.cia.gov/library/publications//the-world-factbook/geos/in.html>.

Cicchetti, D. and J. A. Blenzer (2004). "A multiple-levels-of-analysis approach to the study of developmental processes in maltreated children." Proceedings of the National Academy of Sciences of the United States of America**101**(50): 17325-17326.

Cleaver, F. (1999). "Paradoxes of participation: questioning participatory approaches to development." Journal of International Development**11**(4): 597-612.

Cleaver, F. (2001). Institutions, Agency and the Limitations of Participatory Approaches to Development. Participation: The New Tyranny? U. Kothari and B. Cooke. New York, Zed Books: 36-56.

Cleaver, F. (2004). The social embeddedness of agency and decision-making. Participation: from tyranny to transformation? Exploring new approaches to to participation in development. S. Hickey and G. Mohan. London; New York, ZED Books Ltd; Distributed exclusively in the U.S. by Palgrave Macmillan: 271-277.

Committee on Disaster Research in the Social Sciences (CDRSS) (2006). Facing hazards and disasters: Understanding human dimensions. Washington DC, National Research Council.

Committee on Private-Public Sector Collaboration to Enhance Community Disaster Resilience (CPSCC) (2011). Building community disaster resilience through private-public collaboration. Washington DC, National Research Council.

Cooke, B. and U. Kothari (2001). Participation: the New Tyranny? New York, Zed Books.

Cooke, P., C. Davies, et al. (2002). "Innovation Advantages of Cities: From Knowledge to Equity in Five Basic Steps." European Planning Studies**10**(2): 233-250.

- Cornwall, A. (2002). Making spaces, changing places: situating participation in development Working Paper 170. Brighton, Institute of Development Studies.
- Cornwall, A. (2008). "Unpacking Participation: models, meanings and practices." Community Development Journal**43**(3): 269-283.
- Crewe, E. and J. Young (2002). Bridging Research and Policy: Context, Evidence and Links. Working Paper 173, Working Paper 173 Overseas Development Institute.
- Cutter, S. L., L. Barnes, et al. (2008a). Community and regional resilience: Perspectives from hazards, disasters, and emergency management, CARRI Research Report 1.
- Cutter, S. L., L. Barnes, et al. (2008). "A place-based model for understanding community resilience to natural disasters." Global Environmental Change**18**(4): 598-606.
- Cutter, S. L., C. G. Burton, et al. (2010). "Disaster Resilience Indicators for Benchmarking Baseline Conditions." Journal of Homeland Security and Emergency Management**7**(1).
- da Silva, J., S. Kernaghan, et al. (2012). "A systems approach to meeting the challenges of urban climate change." International Journal of Urban Sustainable Development**4**(2): 125-145.
- Dahl, R. (1968). Power. International Encyclopedia of the Social Sciences. D. L. Sills and R. K. Merton. New York, Macmillan.
- Datta, P. (2006). Urbanisation in India. European Population Conference, Indian Statistical Institute.
- David, M and C. Sutton (2004). Social research: the basics. Thousand Oaks, Sage Publications
- Denzin, N. and L. Yvonna Sessions (2005). The SAGE Handbook of Qualitative Research. Thousand Oaks, SAGE Publications.
- Desai, V. and R. Potter (2006). Doing Development Research, Thousand Oaks, SAGE Publications.
- Desanker, P. (2010). "Overview of the NAPA Process: Steps in Developing a NAPA." Retrieved 20th May, 2010, from [http://unfccc.int/files/adaptation/napas/application/pdf/09\\_overview\\_napa\\_process.pdf](http://unfccc.int/files/adaptation/napas/application/pdf/09_overview_napa_process.pdf)
- Devereux, S. and R. Wheeler (2004). Transformative social protection. Working Paper 232. Brighton, Institute of Development Studies.
- Dodman, D. (2008). Building resilience: how the urban poor can drive climate adaptation. . London, IIED Opinion November.
- Dodman, D., J. Ayers, et al. (2009). Building Resilience. State of the World 2009: Into a

Warming World. Washington DC, Worldwatch Institute.

Dodman, D., D. Brown, et al. (2013). Understanding the nature and scale of urban risk in low- and middleincome countries and its implications for humanitarian preparedness, planning and response. London, International Institute of Environment and Development (IIED).

Dodman, D. and J. Carmin (2011). Urban adaptation planning: the use and limits of climate science. IIED Briefing. London, International Institute of Environment and Development (IIED).

Dodman, D. and D. Satterthwaite (2008). "Institutional Capacity, Climate Change Adaptation and the Urban Poor." IDS Bulletin**39**(4): 67-74.

Dodman, D. and D. Mitlin (2009). "Challenges for community-based adaptation: discovering the potential for transformation." Journal of International Development DOI: 10.1002/jid.1772.

Dolwick, J. (2009). "The Social and Beyond: Introducing Actor-Network Theory." Journal of Maritime Archaeology**4**(1): 21-49.

Dovers, S. R. and J. W. Handmer (1992). "Uncertainty, sustainability and change." Global Environmental Change**2**(4): 262-276.

Dow, K. (1992). "Exploring differences in our common future(s): the meaning of vulnerability to global environmental change." Geoforum**23**(3): 417-436.

Dubash, N. (2009). Toward a progressive Indian and global climate politics. Centre for Policy Research Working Paper

Dubash, N. (2012) Introduction. Handbook of Climate Change and India. London, Earthscan

Eisenstadt, S. N. and L. Roniger (1980). "Patron Client Relations as a Model of Structuring Social Exchange." Comparative Studies in Society and History**22**(01): 42-77.

Ernstson, H., S. Leeuw, et al. (2010). "Urban Transitions: On Urban Resilience and Human-Dominated Ecosystems." AMBIO**39**(8): 531-545.

European Union (2010). "Urban Climate Resilience." Retrieved 1st December, 2012, from <http://www.eea.europa.eu/publications/urban-adaptation-to-climate-change2>.

Fairclough, N. (1992). Discourse and Social Change. Malden, Wiley.

Folke, C. (2006). "Resilience: The emergence of a perspective for social "ecological systems analyses." Global Environmental Change**16**(3): 253-267.

Foster, K. A. (2007). "Snapping back: What makes regions resilient?" National Civic Review**96**(3): 27-29.

Foucault, M. (1977). Discipline & Punish, Allen Lane.

Francis, D., J. Bessant, et al. (2003). "Managing radical organisational transformation." Management Decision**41**(1): 18 - 31.

Fussler, H.M. (2007). "Vulnerability: A generally applicable conceptual framework for climate change research." Global Environmental Change**17**(2): 155-167.

Gaillard, J. C. (2010). "Vulnerability, capacity and resilience: Perspectives for climate and development policy." Journal of International Development**22**(2): 218-232.

Gallopin, G. C. (2006). "Linkages between vulnerability, resilience, and adaptive capacity." Global Environmental Change**16**(3): 293-303.

Garg, S. C. (2010). "Mobilising Urban Infrastructure Finance In India In A Responsible Fiscal Framework." Retrieved 6th December 2012, from <http://siteresources.worldbank.org/INTMF/Resources/339747-1105651852282/Garg.pdf>.

Garschagen, M. (2013). "Resilience and organisational institutionalism from a cross-cultural perspective: an exploration based on urban climate change adaptation in Vietnam." Natural Hazards**67**(1): 25-46.

Gasper, R., A. Blohm, et al. (2011). "Social and economic impacts of climate change on the urban environment." Current Opinion in Environmental Sustainability**3**(3): 150-157.

Gaventa, J. (2005). On the Uses of the 'Power Cube' Approach for Analyzing the Spaces, Places and Dynamics of Civil Society Participation and Engagement. CFP evaluation series. **2003-2006: no 4**.

Gaventa, J. (2006). "Finding the Spaces for Change: A Power Analysis." IDS Bulletin**37**(6): 23-33.

GEAG (2009). Vulnerability Analysis. Gorakhpur Environmental Action Group. Gorakhpur.

GEAG (2010a). Resilience Strategy Gorakhpur City. Gorakhpur, Gorakhpur Environmental Action Group (GEAG).

GEAG (2010). Developing, Testing and Institutionalizing Ward Level Micro Resilience Planning – A Model for Replication Gorakhpur, Gorakhpur Environmental Action Group (GEAG).

Giddens, A. (1979). Central Problems in Social Theory: Action, Structure and Contradictions in Social Analysis. California, University of California Press.

Giddens, A. (1990). The consequences of modernity. California, Stanford University Press.

Giddens, A. (1991). Modernity and Self-identity: Self and Society in the Late Modern Age. Californai, Stanford University Press.

Godschalk, D. (2003). "Urban Hazard Mitigation: Creating Resilient Cities." Natural Hazards Review4(3): 136-143.

Gomm, R. (2004). Social research methodology: a critical introduction. New York, Palgrave Macmillan.

GovernmentofIndia (2001). "Census Data 2001." from [http://www.censusindia.gov.in/2011-common/census\\_data\\_2001.html](http://www.censusindia.gov.in/2011-common/census_data_2001.html) on 14th December 2012. .

GovernmentofIndia (2008) National Action Plan on Climate Change. Prime Minister's Office.

Grindle, M. S. and J. W. Thomas (1991). Public choices and policy change: the political economy of reform in developing countries. Maryland, Johns Hopkins University Press.

Gunderson, L. H. and C. S. Holling (2001). Panarchy: Understanding Transformations in Human and Natural Systems. Washington D.C. Island Press.

Gupta, V. (2011). "A Critical Assessment of Climate Change Impacts, Vulnerability and Policy in India." Present Environment and Sustainable Development5(1).

Haas, P. M. (1992). "Introduction: epistemic communities and international policy coordination." International Organization46(01): 1-35.

Hall, S. (1997). Foucault: Power, Knowledge and Discourse. Discourse Theory and Practice: A Reader. M. Wetherall, S. Taylor and S. Yates. London, Sage.

Hawthorn, J. (1998). A Concise Glossary of Contemporary Literary Theory, Arnold.

Henderson, N. R. (2009). "Managing Moderator Stress: Take a Deep Breath. You Can Do This!" Marketing Research21(1).

Hickey, S. and G. Mohan (2004). Participation--From Tyranny to Transformation?: Exploring New Approaches to Participation in Development, New York, Zed Books.

Hogwood, B. W. and L. A. Gunn (1984). Policy Analysis for the Real World, Oxford, Oxford University Press.

Holling, C. S. (1973). "Resilience and Stability of Ecological Systems." Annual Review of Ecology and Systematics4(1): 1-23.

Holling, C. S. (1986). The resilience of terrestrial ecosystems; local surprise and global change. Sustainable Development of the Biosphere. W. C. C. a. R. E. Munn. United Kingdom, Cambridge University Press, Cambridge: 292-317.

Holling, C. S. (1987). "Simplifying the complex: the paradigms of ecological function

and structure." European Journal of Operational Research**30**: 139-146.

Holling, C. S. (1988). "Temperate Forest Insect Outbreaks, Tropical Deforestation and Migratory Birds." Memoirs of the Entomological Society of Canada**120**(SupplementS146): 21-32.

Holling, C. S. (1992). "Cross-Scale Morphology, Geometry, and Dynamics of Ecosystems." Ecological Monographs**62**(4): 447-502.

Hopkins, P. (2007). "Positionalities and Knowledge: Negotiating Ethics in Practice." ACME Editorial Collective.

Howarth, D. (2005). Discourse. New Delhi, Viva Books.

Indian Express (2008). Per head income: UP, Bihar, MP at bottom. Indian Express. 28th January. Available at: <<http://www.expressindia.com/latestnews/Per-head-income-UP-Bihar-MP-atbottom/263915/>> (Retrieved on 17th July 2011)

Institute of Development Studies (IDS) (2001). Power Pack: Understanding Power for Social Change. Brighton, Institute of Development Studies.

IPCC (2007). Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007. M. L. Parry, O. F. Canziani, J. P. Palutikof, P. J. v. d. Linden and C. E. Hanson. New York, Cambridge University Press.

ISET (2008). Re-imagining the rural-urban continuum: Understanding the role ecosystem services play in the livelihoods of the poor in Desakota regions undergoing rapid change. Kathmandu, Institute for Social and Environmental Transition-Nepal (ISET-N).

ISET (2009). Responding to the Urban Climate Challenge. Boulder, Institute for Social and Environmental Transition (ISET).

ISET (2010). The shared learning dialogue: Building stakeholder capacity and engagement for resilience action. climate resilience in concept and practice. Working Paper Series. Boulder, ISET.

ISET (2010a). ISET Methodology Suite. ISET. Available at <<http://www.i-s-e-t.org/methodology-suite>> (Retrieved on 16<sup>th</sup> June 2010)

Janssen, M. A. and E. Ostrom (2006). "Resilience, vulnerability, and adaptation: A cross-cutting theme of the International Human Dimensions Programme on Global Environmental Change." Global Environmental Change**16**(3): 237-239.

Jasonoff, F. (2008). Survival of the Fittest. Re-framing Resilience. M. Leach. Brighton, STEPS Centre working paper. **13**.

Jha, A. (2011). "Much ado about the State Action Plans on Climate Change; its business as usual for the governments." PAIRVI Occasional Paper Series(August).

John, P. (1998). Analysing public policy, New York, Pinter.

Jones, H. (2009). Policy-making as discourse: a review of recent knowledge-to-policy literature. Working paper. London, Overseas Development Institute. 5.

Kannan, K. (2009). "Gorakhpur looks different from the climate change lens." Retrieved 23rd November 2010, from <http://www.oxfamindia.org/blog/kkannan/gorakhpurlooksdifferentclimatechangelens%E2%80%A6>

Kapoor, R. (2007). "Transforming self and society: Plural paths to human emancipation." Futures39(5): 475-486.

Kauffman, S. (1995). At Home in the Universe: The Search for the Laws of Self-Organization and Complexity, Oxford University Press, USA.

Keeley, J. and I. Scoones (1999). Understanding Environmental Policy Processes: A Review Working Paper. Brighton, Institute of Development Studies. 89.

Keeley, J. and I. C. Scoones (2003). Understanding Environmental Policy Processes: Cases from Africa, Earthscan Publications.

Kelly, J. (2012). The Agenda-Setting Power of Epistemic Communities in Public Diplomacy. International Studies Association Annual Conference. San Diego.

Klein, R. J. T., R. J. Nicholls, et al. (2003). "Resilience to natural hazards: How useful is this concept?" Global Environmental Change Part B: Environmental Hazards5(12): 35-45.

Korf, B. (2002). Does PRA make sense in democratic societies? PLA Notes: 44. London, International Institute of Environment and Development (IIED).

Kothari, U. (2001). Power, Knowledge and Social Control in Participatory Development. Participation: The New Tyranny? B. Cooke and U. Kothari. New York, Zed Books: 139-153.

Krueger, R. A. and M. A. Casey (2009). Focus Groups: A Practical Guide for Applied Research. Thousand Oaks, SAGE Publications.

Kuhlicke, C. (2013). "Resilience: a capacity and a myth: findings from an in-depth case study in disaster management research." Natural Hazards67(1): 61-76.

Lankao, P. and D. Dodman (2011). "Cities in transition: transforming urban centers from hotbeds of GHG emissions and vulnerability to seedbeds of sustainability and resilience: Introduction and Editorial overview." Current Opinion in Environmental Sustainability3(3): 113-120.

Lankao, P. and H. Qin (2011). "Conceptualizing urban vulnerability to global climate and environmental change." Current Opinion in Environmental Sustainability3(3): 142-149.

Latour, B. (1996). "On actor-network theory. A few clarifications plus more than a few complications." Soziale Welt47: 369-381.

Latour, B. (2005). Reassembling the Social: An Introduction to Actor-Network-Theory. Oxford, Oxford University Press.

LaTrobe, S. and I. Davis (2005). Mainstreaming disaster risk reduction. Middlesex, Tear Fund.

Law, J. (1992). "Notes on the theory of the actor-network: Ordering, strategy, and heterogeneity." Systems practice5(4): 379-393.

Leach, M. (2008). Re-framing Resilience. STEPS working paper. Brighton, Institute of Development Studies. 13.

Leary, N. (2002). Vulnerability of People, Places and Systems to Environmental Change. CMU Distance Seminar.

Leichenko, R. (2011). "Climate change and urban resilience." Current Opinion in Environmental Sustainability3(3): 164-168.

Lim, B. S.-S., Erika; Burton, Ian; Malone, Elizabeth; Huq, Saleemul (2005). Adaptation policy frameworks for climate change: developing strategies, policies and measures. United Kingdom, Cambridge University Press.

Lindblom, C. (1959). "The Science of Muddling Through'." Public Administration Review19: 79-88.

Lindblom, C. (1979). "Still muddling, not yet through." Public Administration Review39: 97-106.

Lingard, L., A. Mathieu, et al. (2008). "Grounded theory, mixed methods, and action research." BMJ337.

Lipsky, M. (1980). Street-level Bureaucracy: Dilemmas of the Individual in Public Services, Russell Sage Foundation.

Littler, C. (1978). "Understanding Taylorism." British Journal of Sociology 29(2): 185-202.

Lorelei, L., A. Mathieu, et al. (2008). "Grounded theory, mixed methods, and action research." BMJ337.

Lukes, S. (1974). Power: A Radical View. United Kingdom, McMillan Press.

Luke, S. (2005). Power: A Radical View-Second Edition. United Kingdom, McMillan Press

Manyena, S. B. (2006). "The concept of resilience revisited." Disasters30(4): 434-450.

Martins, R. D. A. and L. D. C. Ferreira (2011). "Opportunities and constraints for local and subnational climate change policy in urban areas: insights from diverse contexts." Int. J. of Global Environmental Issues**11**(1): 37 - 53.

May, T. (2001). Social Research: Issues, methods and process. United Kingdom, Open University

Mayunga, J. (2007). Understanding and Applying the Concept of Community Disaster Resilience: A Capital-Based Approach. Draft working paper prepared for the summer academy, Megacities as Hotspots of Risk: Social Vulnerability. Munich.

McDaniels, T., S. Chang, et al. (2008). "Fostering resilience to extreme events within infrastructure systems: Characterizing decision contexts for mitigation and adaptation." Global Environmental Change**18**(2): 310-318.

McGray, H., A. Hammill, et al. (2007). Weathering the Storm. Washington D.C., World Resources Institute.

McIntosh, A., Stayner, R., Carrington, K., Rolley, F., Scott, J., & Sorensen, T (2008) Resilience in Rural Communities. Centre for Applied Research in Social Science

McLaughlin, P. and T. Dietz (2008). "Structure, agency and environment: Toward an integrated perspective on vulnerability." Global Environmental Change**18**(1): 99-111.

Mercer, J. (2010). "Disaster risk reduction or climate change adaptation: Are we reinventing the wheel?" Journal of International Development**22**(2): 247-264.

Meyer, M. and S. Molyneux-Hodgson (2010). "Introduction: The Dynamics of Epistemic Communities." Sociological Research Online**15**(2): 14.

Miller, F., R. K. Larsen, et al. (2008). Hybrids, Bifocals, Tipping Points and Speed Dating: Report from the Resilience- Vulnerability Colloquium – From Theory to Practice, From Disconnect to Synergy in Support of Sustainable Development. Sweden, Stockholm Environment Institute.

Miller, F., H. Osbahr, et al. (2010). "Resilience and vulnerability: complementary or conflicting concepts?" Ecology and Society **15**(3).

Mills, S. (1997). Discourse. London, Routledge

Mintrom, M. (1997). "Policy Entrepreneurs and the Diffusion of Innovation." American Journal of Political Science**41**(3): 738-770.

Mitchell, T. and M. v. Aalst (2008). Convergence of Disaster Risk Reduction and Climate Change Adaptation. A review for DfID. London, DfID.

Mitchell, T. and T. Tanner (2006). Adapting to climate change, Tear Fund.

Mitlin, D. and J. Thompson, Eds. (1994). Special Issue on Participatory Tools and

Methods in Urban Areas. London, International Institute of Environment and Development.

Mitra, A. (2009). Saving a Dying Lake: The Case of Ramgarh Tal in Gorakhpur. Gorakhpur, Gorakhpur Environmental Action Group (GEAG).

Moench, M. T., S. & Lage, J. (2011). Catalyzing Urban Climate Resilience. USA, ISET.

Mohan, G. (2001). Participatory development. The Arnold companion to development studies. V. Desai and R. potter. United Kingdom, Hodder: 49-54.

Moser, C. O. N. (1998). "The asset vulnerability framework: Reassessing urban poverty reduction strategies." World Development26(1): 1-19.

Moser, S. (2008). Resilience in the Face of Global Environmental Change. CARRI. Research Report 2.

Mosse, D. (2001). People's knowledge', participation and patronage: operations and representations in rural development. Participation; the new tyranny? B. Cooke and U. Kothari. New York, Zed Books: 16-35.

Mukhopadhyaya, A., N. Jayal, et al. (2000). Decentralisation in India. Discussion Paper Series 1. New Delhi, United Nations Development Program.

Mukhopadhyay, P and Revi, A. (2012). Climate change and urbanization in India. Handbook of Climate Change and India. N. Dubash. London, Earthscan

Dube, K and Mishra, S (1988). Trend of urbanization and its socio-economic impact in Eastern Uttar Pradesh. Urban Environment in India. K. Dube and A. Singh. Delhi, Inter-India Publications.

NASA. (2013). "Global Climate Change." Retrieved 12<sup>th</sup> May 2013 from <http://climate.nasa.gov/climatechangeFAQ#Q8>

Nelson, D. R., W. N. Adger, et al. (2007). "Adaptation to Environmental Change: Contributions of a Resilience Framework." Annual Review of Environment and Resources32(1): 395-419.

Norris, F., S. Stevens, et al. (2008). "Community Resilience as a Metaphor, Theory, Set of Capacities, and Strategy for Disaster Readiness." American Journal of Community Psychology41(1-2): 127-150.

O'Brien, G. and P. O'Keefe (2010). "Resilient responses to climate change and variability: a challenge for public policy." Int. J. of Public Policy6(3/4): 369 - 385.

O'Brien, K. (2011). "Global environmental change II: From adaptation to deliberate transformation." Progress in Human Geography.

O'Brien, K., S. Eriksen, et al. (2004). What's in a word? Conflicting interpretations of

vulnerability in climate change research. Oslo, Center for International Climate and Environmental Research. **4**.

OECD (2009). Integrating Climate Change Adaptation into Development Co-Operation. Organisation for Economic Co-operation and Development Paris.

Osbahr, H. (2007). Building resilience: Adaptation mechanisms and mainstreaming for the poor. Human Development Report Occasional Paper. Oxford.

Ostrom, E. (2009). "A General Framework for Analyzing Sustainability of Social-Ecological Systems." Science**325**(5939): 419-422.

Parsons, D. W. (1995). Public policy: an introduction to the theory and practice of policy analysis, Edward Elgar.

Patrick, M.-B. and J. M. Anderies (2011) Resilience: A Literature Review. USA: CUNY & Arizona State University

Pelling, M. (2011). Adaptation to Climate Change: From Resilience to Transformation. New York, Taylor & Francis.

Pelling, M. and D. Navaratte (2011). "From resilience to transformation: the adaptive cycle in two Mexican urban centers." Ecology and Society **16**(2): 11.

Plowman, D. A., S. Solansky, et al. (2007). "The role of leadership in emergent, self organization." Leadership Quarterly**18**(4): 341-356

Prashar, S., R. Shaw, et al. (2012). "Community action planning in East Delhi: a participatory approach to build urban disaster resilience." Mitigation and Adaptation Strategies for Global Change**18**(4): 429-448.

Prevention Web (2009). "Hydrometeorological hazard." Retrieved 22nd June, 2012, from <http://www.preventionweb.net/english/professional/terminology/v.php?id=490>.

Priyadarshani, S. (2012). "Gaping holes in India's climate change policy." Retrieved 4th April, 2012, from <http://www.nature.com/nindia/2012/120909/full/nindia.2012.130.html>.

Prowse, M. (2003). Towards a clearer understanding of 'vulnerability' in relation to chronic poverty. CPRC Working Paper Manchester. **24**.

Ramalingam, B., H. Jones, et al. (2008). Exploring the science of complexity: Ideas and implications for development and humanitarian efforts. London, Overseas Development Institute. **285**.

Ramesh, J. (2012) Foreword. Handbook of Climate Change and India. N. Dubash. London, Earthscan

Reason, P. and H. Bradbury, Eds. (2009). The SAGE Handbook of Action Research: Participative Inquiry and Practice. London, SAGE Publications.

Resilience Alliance (2002). "Resilience." Retrieved 13th December, 2012, from <http://www.resalliance.org/index.php/resilience>.

Ritzer, G., Ed. (2004). Encyclopedia of social theory. Thousand Oaks, CA, SAGE Publications.

Roberts, D. (2008). "Thinking globally, acting locally institutionalizing climate change at the local government level in Durban, South Africa." Environment and Urbanization**20**(2): 521-537.

Roberts, N. C. and P. J. King (1991). "Policy Entrepreneurs: Their Activity Structure and Function in the Policy Process." Journal of Public Administration Research and Theory**1**(2): 147-175.

Rockefeller, F. (2009). Building Climate Change Resilience. Rockefeller Foundation White Paper.

Rockefeller, F. (2010). Asian Cities Climate Change Resilience Network. Rockefeller Foundation. New York.

Rodriguez, R. (2009). "Learning to adapt to climate change in urban areas. A review of recent contributions." Current Opinion in Environmental Sustainability**1**(2): 201-206.

Rose, A. (2004). "Defining and measuring economic resilience to disasters." Disaster Prevention and Management**13**(4): 307-314.

Ruth, M. and A. Baklanov (2012). "Urban climate science, planning, policy and investment challenges." Urban Climate**1**(0): 1-3.

Ruth, M. and D. Coelho (2007). "Understanding and managing the complexity of urban systems under climate change." Climate Policy**7**(4): 317-336.

Saldana, J. (2009). The Coding Manual for Qualitative Researchers. London, SAGE Publications.

Scheyvens, R. and D. Storey (2007). Development Fieldwork: A Practical Guide. London, SAGE Publications.

Scott, J. (1972). "Patron-Client Politics and Political Change in Southeast Asia." The American Political Science Review**66**(1): 91-113

Scott, J. C. (1991). A Matter of Record: Documentary Sources in Social Research, Wiley.

Sen, A. (1999). Development as Freedom. Oxford, Oxford University Press.

Shields, R. (2004). Henri Lefebvre Key Thinkers on Space and Place. P. Hubbard, R. Kitchin and G. Valentine. London, SAGE Publications.

Simonsen, S. H. (2007). "Resilience dictionary." Retrieved 12th February, 2011, from <http://www.stockholmresilience.org/research/whatisresilience/resiliencedictionary.4.aee.a46911a3127427980004355.html>.

Sin, C. H. (2008). "The role of intermediaries in getting evidence into policy and practice: some useful lessons from examining consultancy-client relationships." Evidence and Policy: A Journal of Research, Debate and Practice4(1): 85-103.

Smit, B. and J. Wandel (2006). "Adaptation, adaptive capacity and vulnerability." Global Environmental Change16(3): 282-292.

Smith, A. and A. Stirling (2010). "The Politics of Social-ecological Resilience and Sustainable Socio-technical Transitions " Ecology and Society15(11).

Spivak, G. (1999). A Critique of Postcolonial Reason: Toward a History of the Vanishing Present. Boston, Harvard University Press.

Stapleton, S. (2010). Climate Scenario for Gorakhpur. Boulder, Institute for Social and Environmental Transition (ISET).

Steen, M., Groenewegen, J. 2008. Exploring Policy Entrepreneurship. Discussion paper series on the Coherence between institutions and technologies in infrastructures WP0801

Stratus Consultin (2007) Screening Asian Megacities to Estimate Relative Exposure to Climate Change, Stratus Consulting, Florida.

Strauss, A. L. and J. M. Corbin (1990). Basics of qualitative research: grounded theory procedures and techniques. London, Sage Publications.

Srinivasan, J. (2012) Impacts of climate change on India. Handbook of Climate Change and India. N. Dubash. London, Earthscan

Sujatha, B. and R. Sudhir (2012) An Evaluation of India's National Action Plan on Climate Change. IFMR Research Working Paper

Sultana, F. (2007). "Reflexivity, Positionality and Participatory Ethics: Negotiating Fieldwork Dilemmas in International Research." ACME: An International E-Journal for Critical Geographies6 (3): 374-385.

Sutton, R. (1991). The Policy Process: An Overview, Overseas Development Institute Working Paper. **118**.

Swanson, D. and S. Bhadwal (2009). Creating Adaptive Policies: A Guide for Policy-making in an Uncertain World. Delhi, Sage.

Swanstrom, T. (2008). Resilience: A Critical Examination of the Ecological Framework. . USA, Institute of Urban and Regional Development.

Tanner, T., Mitchell, T., Polack, E. and G. Guenther (2009) Urban Governance for

Adaptation: Assessing Climate Change Resilience in Ten Asian Cities, Institute of Development Studies Working Paper. 315

TARU (2010). Phase 2: City Vulnerability Analysis Report Indore and Surat. India, TARU.

TERI, IISD, et al. (2006). Designing Policies in a World of Uncertainty, Change, and Surprise. Canada, International Institute for Sustainable Development.

Theobald, R. (1982). "Patrimonialism." World Politics**34**(4): 548-559.

Thomalla, F., T. Downing, et al. (2006). "Reducing hazard vulnerability: towards a common approach between disaster risk reduction and climate adaptation." Disasters**30**(1): 39-48.

Tufte, T. and P. Mefalopulos (2009). Participatory Communication : A Practical Guide. Washington DC, World Bank.

Turner, B. (2008). A Skeptic's Comments On Resilience and Alternative Approaches to Coupled Human-Environment Systems. Re-framing Resilience. M. Leach. Brighton, STEPS Centre Working Paper.

Twigg, J. (2004). "Disaster Risk Reduction. Mitigation and Preparedness in Development and Emergency Programming." HPN Good Practice Review**9**.

Twigg, J. (2007). Characteristics of a disaster-resilient community. London, Department for International Development.

Underdal, A. (2010). "Complexity and challenges of long-term environmental governance." Global Environmental Change**20**(3): 386-393.

United Nations Development Group (UNDG) (2009). Intergrating Disaster Risk Reduction Into The CCA and UNDAF, United Nations Development Group.

United Nations Environment Program (UNEP) (2010). Linkages Between Disaster Risk Reduction and Climate Change Adaptation. Pathumthani, United Nations Environment Program (UNEP).

Van Aalst, M., T. Cannon et. Al. (2008). "Community level adaptation to climate change: The potential role of participatory community risk assessment." Global Environmental Change**18** 165–179

VeneKlasen, L., V. Miller, et al. (2007). A new weave of power, people, and politics: the action guide for advocacy and citizen participation, Practical Action Pub.

Verma, S. (2009). Geo-hydrological Study of Gorakhpur City. Gorakhpur, Gorakhpur Environmental Action Group (GEAG).

Vogel, I., D. Wendt, et al. (2007). In the know: conceptualising information interventions in international development (Draft Paper). Brighton, Institute of

Development Studies.

Walker, B., C. S. Holling, et al. (2004). "Resilience, Adaptability and Transformability in Social–ecological Systems." Ecology and Society **9**(2).

Walker, B., D. Salt, et al. (2006). Resilience Thinking: Sustaining Ecosystems and People in a Changing World. Washington DC, Island Press.

Webb, G., K. Tierney, et al. (2000). "Businesses and Disasters: Empirical Patterns and Unanswered Questions." Natural Hazards Review **1**(2): 83-90.

Weber, M. a. (1997). The Theory Of Social And Economic Organization, Free Press.

Welp, Y., F. Urgell, et al. (2007). "From Bureaucratic Administration to Network Administration? An Empirical Study on E-Government Focus on Catalonia." Public Organization Review **7**(4): 299-316.

Whereincity (2010). "Uttar Pradesh." Retrieved 1st June, 2010, from <http://www.whereincity.com/india/uttar-pradesh/>

White, S. (1996). "Depoliticising development: the uses and abuses of participation." Development in Practice **6**(1): 6-15.

Wilbanks, T. J., P. R. Lankao, et al. (2007). Industry, settlement and society. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Fourth Assessment Report of the Intergovernmental Panel on Climate Change. M. L. Parry, O. F. Canziani, J. P. Palutikof, P. J. v. d. Linden and C. E. Hanson. Cambridge U.K., Cambridge University Press.

Wilby, R. L. and S. Dessai (2010). "Robust adaptation to climate change." Weather **65**(7): 180-185.

Wolfe, R. (2006). Challenging the modernist view of knowledge, communication and social change. Brighton, Institute of Development Studies.

Woolmer, W. (2006). Understanding policy processes. Brighton, Institute of Development Studies.

World Bank (2010). "World Development Indicators." Retrieved 24th November, 2011, from [http://data.worldbank.org/data-catalog/world-development-indicators?cid=GPD\\_WDI](http://data.worldbank.org/data-catalog/world-development-indicators?cid=GPD_WDI).

Zahariadis, N. (2007). The Multiple Streams Framework. Theories of the Policy Process. P. Sabatier. Boulder, Westview Press.

Zito, A. R. (2001). "Epistemic communities, European Union governance and the public voice." Science and Public Policy **28**(6): 465-476.