

Climate policy integration at national scale

by

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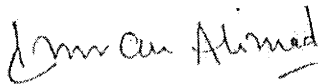
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THE AUSTRALIAN NATIONAL UNIVERSITY

Candidate's declaration

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university. To the best of the author's knowledge, it contains no material previously published or written by another person, except where due reference is made in the text.



Imran Habib Ahmad

Date: October 14th,
2012

This thesis is dedicated to my parents, my wife, Shazia and my children:

Sophia, Jibran, Natalia and Ayaan

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I hope this research will contribute to increased understanding of climate policy integration and help us make a safer world for our children and grandchildren.

Abstract

This thesis explores climate policy integration (CPI) particularly looking at the structures and processes at the national policy scale and draws on insights from two developing countries, Pakistan and Malaysia. Climate policy integration is an emerging area of research in scholarly and policy literature that has been advanced as a mechanism for dealing with an integrated climate and development challenge. However, the literature is deficient in terms of coverage of developing countries, evidence of CPI at national scales, exploration of structures and processes and the conditions under which the process of CPI can be most effective. This research attempts to fill this scholarly and practical gap.

This thesis presents an interdisciplinary research touching on, *inter alia*, the areas of development policy and economics, sustainable development, environmental policy integration (EPI), public policy, environmental change and history, governance and international relations. Theory construction was formulated using case study and adaptive theory approaches. Empirical evidence was collected qualitatively through review and analysis of literature, document analysis and semi-structured interviews. In order to extend into actual policy systems of national scale, case studies of two developing countries, Pakistan and Malaysia, with contrasting but in some ways similar development challenges, were undertaken.

Five key research questions were formulated to empirically explore CPI: what is the scholarly discourse on integrated climate change and sustainable development? In what ways do policy systems and processes at the national level respond to climate change and sustainable development? In what ways can CPI learn from EPI? In what ways do policymakers respond to climate change at the national scale to enable mainstreaming or CPI in the decision-making structures and processes? And what lessons can be drawn and are these lessons transferrable to other countries and levels of governance?

While some of the issues that arise in Pakistan and Malaysia are predictable from a policy integration perspective and often identified in the literature (e.g. silos, question of lead agency), some arise that are less familiar (e.g. the role of information). Climate policy development has occurred in both countries, but with very different foci and priorities, especially regarding mitigation versus adaptation. Key agencies are becoming sensitised to climate change. However, there is a clear disconnect between the high-level political priority being increasingly accorded to climate change in both countries, and the slow rate of agency

response and implementation. Mainstreaming or integration is occurring, but incorporation of climate change objectives into all stages of policymaking is still weak. 'Silos' across the policy system are a major issue. The information basis and capacity to develop and justify policy action across sectors is an issue in both countries, but with different emphases. As a process to begin understanding the climate mitigation and adaptation imperatives and costs for each country was only starting to appear, a full aggregate of climate consequences into the all aspects of public policy has still to be made and contradictions between sectoral policies have not been removed.

The work contributes a new interpretation of CPI within a public policy and administrative framework. It suggests an integration dynamic that advances low carbon and climate-resilient development and questions the hitherto piece meal and incremental approach that national and global policymakers have internalised to deal with the climate challenge. This views mainstreaming as a vehicle for advancing low carbon and climate-resilient development rather than as an end product of existing practices. This requires a paradigm shift from existing separation of discourses, in particular on EPI and CPI to advance sustainable development.

Abbreviations

ADB	Asian Development Bank
CDM	clean development mechanism
CPI	climate policy integration
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
DP	development partner
EU	European Union
EPI	environmental policy integration
FG	federal government policymakers
GCISC	Global Change Impact Studies Center
GDP	gross domestic product
GHG	greenhouse gases
GNI	gross national income
HBP	Hagler Bailly Pakistan
HDIP	Hydrocarbon Development Institute of Pakistan
HEC	Higher Education Commission
ICIMOD	The International Centre for Integrated Mountain Development
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for Conservation of Nature
LEAD	Leadership for Environment and Development
LULUCF	land use change and forestry
MOE	Ministry of Environment
MOF	Ministry of Finance
MOFA	Ministry of Foreign Affairs
MOW&P	Ministry of Water and Power
MOInd&P	Ministry of Industries and Production

NCS	national conservation strategy
NARC	National Agriculture Research Center
NDMA	National Disaster Management Agency
NEP	new economic policy
NRE	Ministry of Natural Resources and Environment
NG	civil society official
NGO	non-government organisation
NIO	National Institute of Oceanography
PC	Planning Commission
PAEC	Pakistan Atomic Energy Commission
PARC	Pakistan Agriculture Research Council
PEPC	Pakistan Environmental Protection Council
PFI	Pakistan Forest Institute
PMD	Pakistan Meteorological Department
PPP	purchasing power parity
RO	research organisation
SEA	strategic environment assessment
SUPARCO	Pakistan Space and Upper Atmosphere Research Commission
UKM	Universiti Kebangsaan Malaysia
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNDESA	United Nations Department for Economic and Social Affairs
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollars
WB	World Bank
WAPDA	Water and Power Development Authority
WMO	World Meteorological Organization

WSSD

World Summit on Sustainable Development

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Chapter 1: Introduction

Climate change can no longer be approached as an environmental problem demanding technical solutions. Climate change is not like lead in petrol or asbestos in construction – undesirable physical substances to be eliminated or regulated. Neither is climate change simply a social problem seeking a political solution. It is not like slavery or domestic violence; distortions of human relationships to be outlawed and policed. Climate change will not be solved by science or technology – although science will continue to yield new insights for us about our changing climates, and technology will continue to offer are new ways of living with them. But neither will climate change be solved by politics or economics – although politics will seek pathways to cooperative action and economics may soften some of the hard edges of our new life with climate change (Hulme, 2009: 328).

1.1 Statement of the problem

While scientific consensus over the scale of climate change has firmed considerably, and acceptance of the need for policy responses has become almost universal, the process of improving the effectiveness of both international and national policy regimes remains slow and difficult. More attention has been given to international than national level policy, yet now that the reality of climate change is more widely accepted, we can expect a shift in focus towards how individual countries can incorporate commitments to responding to climate change into domestic policy. Initially, this consideration is about adopting particular goals and targets, but this leads inevitably to the more complex question of how to embed climate considerations in domestic policy.

Climate policy in both mitigation and adaptation dimensions is firmly a cross-sectoral and whole-of-government activity; however, such 'mainstreaming' or integration of climate policy is yet to be progressed sufficiently either in scholarly literature or in policy practice. According to Agrawala and Aalst (2008:188) " ...Climate change is often viewed primarily as a top-down, multilateral negotiation issue. Expertise on this subject is often the domain of environment departments in governments and donor agencies, and such departments have limited leverage over 'line departments', such as those dealing with finance, transport and agriculture, whose policies and frameworks might need to be modified for effective integration of climate risks...". This is a critical implementation deficit. In particular, the relationship – whether positive, neutral or negative – between climate policy and sustainable development policy, and

especially human and economic development policy in developing nations, remains unclear. A mainstreamed approach has been recognised as useful for dealing with climate change (Metz, 2010). Research is needed to establish the conditions under which the process of mainstreaming can be most effective (Klein et al. 2005). This research attempts to fill this gap, which exists in both scholarly research and public policy.

This chapter provides the background, context and objectives for undertaking this research and outlines the methodology utilised. Chapter 1 has two parts: an introduction to the thesis, and the methodology for the research. The introduction consists of the following: an outline of the problem; the aims and objectives of the study; the research questions; theorising and mapping of climate policy integration; the significance and scope of the study; and the inherent limitations of the research. The methodology section describes: the case study method; the selection of case studies; the role of the researcher; document analysis; semi-structured interviews; selection of key informants; and interview questions. The chapter closes with a description of the structure of the thesis.

1.2 Aims and objectives of the study

The overarching aim of this research is to examine the relationship between climate change policy and sustainable development at the national scale by focussing on climate policy integration. The research explores and analyses the implementation of climate change and development policy at the national scale, in accordance with countries' national priorities and associated linkages with the international climate policy process. The focus at this national level provides ground for investigating where much operational implementation – 'mainstreaming' or 'policy integration' – will have to occur. At this level, climate policy becomes less a matter of science, international law and politics, and more a matter of public policy and public administration. Surrounding more familiar domestic policy issues, such as the relative merits of alternative policy instruments (taxes, emissions trading, regulatory standards, research and development, and technology development, etc.), are less attended issues regarding the appropriate policy and administrative structures and processes needed to mainstream climate change in national decision-making or in simple terms "policy integration". According to Mickwitz and Paula (2007:3), "*Policy integration* is a term used to describe the incorporation of specific public policy objectives, for instance environmental protection, into other public policies. The terms 'mainstreaming' and 'horizontal priorities' have also been used to describe similar intentions". The 'cost-benefit' of policy integration is a strongly held position in the theoretical and applied literature (see Chapter 2) and that there is

a circularity following this proposition as the cost-benefit. That is, the efficiency and effectiveness benefit of integration in the case of proposed CPI accrue in sectoral policy/programmes as a result of integration and the impacts of integration are slow to appear and difficult to quantify.

Mitigation and adaptation have been addressed in an integrated manner in this research. However, it needs to be pointed out that it is not always necessary to have an integrated approach as sectoral advance is possible in the absence of stronger CPI, but better sectoral policy is proposed in the EPI and CPI field to flow from a more integrated framework or processes, via synergies, efficiencies and priorities, and that CPI across mitigation and adaptation guards against maladaptation (Barnett and O'Neill, 2010).

The overarching objectives of this research are to develop a better understanding of the barriers to and potential policy and institutional mechanisms for mainstreaming climate policy across other policy sectors towards the goal of sustainable development. Particular emphasis is placed on the challenges facing developing economies, two of which have been studied in this research, in regards to carbon emission reduction. Such countries currently receive little focus in policy debates or the literature, and have few incentives at present to engage fully in climate policy as a whole-of-government activity.

The whole-of-government (WOG) concept used in this research is meant to signify a unified public sector approach to dealing with a cross-cutting challenge like climate change. The original concept of WOG or joined-up-government have originated from European and United Kingdom service delivery theory and practice and the main aim was to get a better grip on the "wicked" issues straddling the boundaries of public sector organizations, administrative levels, and policy areas (Christensen and Laegreid, 2007; Richards and Smith 2006). This approach intended to apply a more holistic view and strategy using knowledge from other social sciences rather than just economics (Christensen and Laegrid, 2007; Bogdanor, 2005). As outlined by Peters (1998: 308): "one of the most important questions in the analysis of the public sector is coordination among public organizations" and lists horizontal government as an important element of focus. Given the nature of climate change, understanding the government at national scales becomes critical. At this level, fundamental decisions are made in the government that will have impacts in towns, cities, states, provinces, councils, etc, and it is important to understand how the horizontal coordination of government is functioning or not. Chapter 2 maps and reviews the EPI process that has used this whole-of-government government concept. This WOG approach requires a review of *horizontal government* and exploration of structures and processes at the national scale (Chapters 4 and 5).

This study is an applied, empirical research endeavour aimed at building national-scale policy discourse and capacity on climate policy integration. There is a lack of directly relevant theory to guide empirical investigation, and as a result the empirical work has largely framed the research approach and the analysis. The work was grounded with the existing literature on climate policy integration (CPI) and environmental policy integration (EPI), but neither of these generally limited literatures comprehensively addresses the context of developing countries (see Chapters 2 and 6). Other literatures like Collaborative Adaptive Management (CAM) and general studies of policy change were explored and were found inappropriate for this research due to their limited focus on horizontal government. For example, CAM literature and approaches, as used in environmental planning, is not deemed an appropriate avenue to pursue given that CAM and many other cognate bodies of theory and practice are not focused on the national level or on policy processes and administrative structures, and have not been applied to highly diffuse national public policy and administration arenas, as opposed to sub-national, discrete and often statutorily defined arenas such as land use planning. The literature on EPI, even with limitation (Chapter 2), has been tested in advanced countries and analysed structures and processes at national and regional scale was considered an appropriate body of knowledge on which to base the research. No other body of literature was found to cover the spectrum of knowledge and practice being explored in this research.

The CPI and related frameworks on climate change and sustainable development have been studied in this research (see Chapter 2), but the lack of advanced theories on CPI, particularly in developing countries, lead to a more applied and empirical analysis. Such an applied focus is consistent with the aim of contributing to policy as well as research agendas. Drawing from both academic and practice oriented literature (Chapter 2), it explores through both literature review and empirical investigation, the nascent field of CPI and experience in developing countries.

This study aims to assist not only the research community, with models on practices of CPI, but also the policymaking community that is engaged in climate policy at the national scale. This study therefore aims to enrich the literature with on-ground investigation of CPI and provide researchers and the policy community with new knowledge on CPI at the national scale. This is intended to assist the research and policy communities to understand the role and contribution of various structures and processes in shaping CPI and changing development pathways. This was one of the areas identified in the IPCC fourth assessment report (2007b) as needing further research.

1.3 Research questions

This thesis comprises exploratory research on CPI at the national scale and the aims and style of research has been chosen to ground and improve the knowledge and understanding of CPI. This thesis examines the incremental or piecemeal research and policy approach to CPI by undertaking a more firmly whole-of-government analysis. It intends to inform whether CPI represents an effective vehicle for advancing sustainable development.

In order to augment the scant theoretical and practical underpinnings of the existing CPI literature, and understand how climate change can be advanced using a sustainable development framework, five key research questions were formulated:

1. What is the scholarly discourse on integrated climate change and sustainable development?
2. In what ways do policy systems and processes at the national level respond to climate change and sustainable development?
3. In what ways can CPI learn from EPI?
4. In what ways do policymakers respond to climate change at the national scale to enable mainstreaming or CPI in decision-making structures and processes?
5. What lessons can be drawn and are these lessons transferrable to other countries and levels of governance?

1.4 Understanding the climate challenge and the need for CPI

Climate change is one of the fundamental defining challenges of the 21st century and the anthropogenic nature of the problem (i.e. the effect of human intervention) has been confirmed overwhelmingly in scientific literature (IPCC 2007a &b);¹ Hansen 2009; Richardson et al. 2009; Rockström et al. 2009; Steffen 2010). The climate problem arises from interference in the natural warming effect of the planet by an increase in greenhouse gases (GHG). From a pre-industrial level of 250 parts per million (ppm) of carbon dioxide equivalent (CO₂e), we have now exceeded 460ppm of CO₂e² (IPCC 2007b; Richardson et al. 2011) and this is affecting the natural climate processes of the planet. Furthermore, the GHG once emitted have a long life

¹ See Lynas 2008 for a more journalistic synthesis of the scientific findings on climate change

² CO₂e defined here does not include the cooling effect of aerosols

span in the atmosphere and the problem becomes one of managing concentrations rather than just emissions.

To have a 50% chance of remaining under 2°C warming above pre-industrial levels, the IPCC fourth assessment report (IPCC 2007b) states that emissions must peak by 2015 and the CO₂e concentration levels should be in the range of 445–490 ppm. To meet this requirement, a recent United Nation (UN) report on green technology (UNDESA 2011) recommended that the next energy transformation needs to happen in the next forty years to have any chance of remaining under the 2°C threshold endorsed in the Copenhagen Accord. This remains a huge challenge given that fossil fuels have a share of around 80% in the current energy mix (IEA 2011).

In the peer-reviewed scientific literature, the debate is no longer on whether or not climate change is an issue, but rather on the severity of the matter and the associated technical, social and economic responses to climate change.

Recent observations show that greenhouse gas emissions and many aspects of the climate are changing near the upper boundary of the IPCC range of projections. Many key climate indicators are already moving beyond the patterns of natural variability within which contemporary society and economy have developed and thrived. These indicators include global mean surface temperature, sea level rise, global ocean temperature, Arctic sea ice extent, ocean acidification, and extreme climatic events. With unabated emissions, many trends in climate will likely accelerate, leading to an increasing risk of abrupt or irreversible climatic shifts (Richardson et al. 2009: 8).

The above changes will have significant impacts on the socio-economic structures of any economy. Thus, the climate problem is no longer just a climate or environmental issue, but a serious sustainable development challenge (Munasinghe & Swart 2005; Metz 2010; Dovers & Hezri 2010; Richardson et al. 2011). The interdependent nature of climate and development is no longer a debatable issue, but the extent of and policy responses to this challenge provide new avenues for researchers and policymakers to pursue. In this emerging area of research, the debate is shifting towards the management and policy challenges arising from the integrated nature of climate and development.

In view of the above, the research begins by studying the discourse on climate change and sustainable development. In asking (Q1) *what is the scholarly discourse on integrated climate change and sustainable development?* this thesis examines the existing literature on the theories, concepts and policy frameworks on climate change and sustainable development. In

examining this integration, the thesis intends to clarify how climate mainstreaming is defined as a broad integration principle to underpin the theoretical foundations of the climate and sustainable development nexus. Examining the climate change and sustainable development literature informs the question of how and why the concept of an integrated framework was developed.

This leads us to the next question (Q2): *in what ways do policy systems and processes at the national level respond to climate change and sustainable development?* In order to understand any operational dynamics of climate integration, it is necessary to understand how policy systems at the national level are responding to climate and sustainable development. This question helps us to understand and determine the level of suggested mainstreaming strategies to operationalise an integrated approach and to evaluate any weaknesses in the literature for embedding CPI at national scales. This calls for an investigation at the empirical level to determine how national policy systems are responding to the needs of CPI, through the mechanisms of policy and administrative structures and processes. In undertaking this analysis, the use of EPI as a principle for integration has been used, which introduces a large body of literature and policy experiences, particularly in developed countries. The national policy systems in the context of this research refer to how the structures and processes are used to design and implement public policy and initiatives at national scales. Chapter 2 describes examples of structures and processes used for EPI in advanced countries while Chapters 3,4 and 5 bring out evidence from structures and processes at national scales used for EPI and CPI in Pakistan and Malaysia.

Given the longer history and wider coverage of EPI in the existing literature, the EPI framework and related structures and processes provide an important entry point for analysing and exploring the more recent and less well-described concept of CPI. This leads to our next two questions (Q3): *In what ways can CPI learn from EPI;* and (Q4) *In what ways do policymakers respond to climate change at the national scale to enable mainstreaming or CPI in decision-making structures and processes?* Building on the foundations of EPI, this question investigated the similarities and differences between CPI and EPI, and the relevant structures and processes in existing or proposed opportunities, and constraints, at the national scale in two developing countries. Given the scale of the scientific consensus on climate change, the research accepts the scale of the problem and focuses its attention on dealing with climate change as a whole-of-government activity.

To conclude the thesis, and as a final contribution to the knowledge and literature, the thesis begs the question (Q5): *what lessons can be drawn and are these lessons transferrable to other*

countries and levels of governance? This question brings out the overarching contribution of CPI in the case study countries to draw lessons regarding barriers and opportunities for policy directions and future research for embedding CPI at national scales.

1.5 Significance and scope of the study

Climate policy integration (CPI) is an emerging area of research in which the central national scale of implementation is only just beginning to be addressed (Mickwitz et al. 2009). The research on CPI has largely focussed on developed countries and has not examined structures and processes at the national scale in much detail. Moreover, coverage of developing countries is scarce (see Chapter 2). This thesis focuses on CPI and the associated structures and processes at the national scale, but is also firmly focussed on developing countries.

Furthermore, an empirical study of two developing countries was undertaken to allow for deeper understanding of the barriers, challenges and opportunities emanating from an embedded CPI approach at the national scale in countries at different stages of development. This research therefore adds a significant contribution to existing knowledge on CPI in general and developing countries in particular.

As this study examines CPI at the national scale the unit of analysis is structure and process at the national scale. Much available work is focussed on key sectors, for example, energy and agriculture. A micro-level focus on sectors helps in understanding the dynamics of a particular sector; however, without a full analysis of the structures and processes, such individual sector analysis remains incomplete. There is a growing body of research on certain sectors, including energy and agriculture, but there has been much less research, particularly in developing countries, analysing CPI focussing on structures and processes more generally at national scale. As we need both perspectives, the position taken here is that it is timely to undertake a broad analysis on CPI at the national scale in developing countries, which has not been attempted in sufficient depth previously.

The work contributes a new interpretation of CPI within a public policy and administrative framework. It suggests an integration dynamic that advances low carbon and climate-resilient development and questions the hitherto piecemeal and incremental approach that national and global policymakers have internalised to deal with the climate challenge. This views mainstreaming as a vehicle for advancing low carbon and climate-resilient development rather than as an end product of existing practices. This requires a paradigm shift from existing separation of discourses, in particular on EPI and CPI, to advance sustainable development.

Given the funding and time constraints for the research, and the limited literature on CPI for developing countries in general and the case study countries (Pakistan and Malaysia) in particular, it was not possible to combine a macro-level analysis with micro-level work on individual sectors, such as energy or agriculture. This research has purposely chosen to mount a broader synthesis on CPI across two countries, rather than focus in detail on specific sectors. However, it is important to understand this limitation in order to gain full insight into the research findings that are presented and analysed in this thesis. The challenges in the empirical work are further explained in the following methodology section.

1.6 Methodology

The previous sections have laid out the broad parameters of this research and have indicated the dynamics of climate, environment and development that demand an exploration of CPI at the national scale. This section explains the research approach and the methodology used. This research is based on an multidisciplinary approach and so no single discipline has been dominant and the research has drawn on different discourses for theoretical and empirical examination.

1.6.1 Adaptive theory and case study approach

Policy research, especially in nascent areas such as CPI, rarely is amenable to strict hypothesis testing. Policy research, particularly in an unfolding domain, does not lend itself to traditional hypothesis testing, but rather a series of research questions to guide the enquiry (Layder, 1998). Pursuing the five research questions required drawing insights from multiple theoretical and empirical literatures and the use of multiple methods. International relations, international law, institutional theory, political economy, public policy and climate policy literatures are drawn on to different degrees for insights that can explain the current implementation deficit, and to suggest possible remedies. In particular, the emerging EPI and whole-of-government literatures have been used. The research is iterative between theoretical propositions and emerging empirical findings, in the sense of Layder's (1998) 'adaptive theory'. According to Layder (1998:133):

Adaptive theory both shapes and is shaped by the empirical data that emerge from the research. It allows the dual influence of extant theory (theoretical models) as well as those that unfold from (and are enfolded in research). Adaptive theorising is an ever-present feature of the research process.

In view of the limited literature on CPI and EPI in Pakistan and Malaysia, the exploratory nature of the research and the evolving interplay between national and international scales on climate policy provided a basis for using an adaptive theory approach in this research. That is, there is insufficient existing, relevant theory on CPI, and very little empirical data. The existing CPI and EPI literature is very weak in terms of empirical investigation of developing countries, which reduces the ability to define a theory and then test it for further guidance in a developing world context. It was therefore realised that a more iterative process between theory and empirical work would best suit this study. CPI, in this research, is being considered in the theoretical and policy proposition, the link with the other, longer standing domains of environmental policy integration. This was necessary due to the very recent emergence of research and policy attention to CPI and the corresponding absence of a viable theoretical framework to base the research. It was a fully iterative process that allowed for the generation of themes that emerged from a detailed synthesis and examination of the semi-structured interviews (Chapters 3, 4 and 5), the document analysis and the literature review. The empirical findings from the research combined with the theory emerging from existing CPI and EPI literature (Chapter 2) were used to inform the synthesis and future policy directions emanating from the two countries (Chapters 6 and 7).

A case study method has been employed for undertaking this research. According to Yin (2003:13), a case study is an empirical enquiry that:

... investigates a contemporary phenomenon within its real life context, especially when the boundaries between phenomenon and context are not clearly evident.

Climate policy integration is a contemporary phenomenon gestating globally and the experiences of CPI may vary in different national contexts. CPI analysis using a survey method was deemed inappropriate for the level of detail this research required. A written survey may have been useful if more countries were explored, but that would have limited the level of policy detail that was considered necessary for this research.

One alternative to a case study that was considered was to explore the ways in which national communications – one of the reporting mechanisms under the United Nations Framework Convention on Climate Change (UNFCCC) – can be used for CPI through a broad survey. The national communication reports are one of the reporting mechanisms under the UNFCCC, in which parties report to the UNFCCC on their national efforts for addressing climate change. National communications offer an initial source of information on proposed or actual strategies that may address CPI in different countries. Materials such as national

communications could provide a broader sample, but are at present patchy and often dated, as the majority of submitted national communications to the UNFCCC by developing countries are the initial national communication, which in some cases were submitted ten years ago. In many developing countries, the preparation of second and third national communications is still ongoing, so the data are not publicly available for research purposes.

For the purposes of this research, Pakistan had submitted the initial national communication to UNFCCC in 2004 (and thus was considered to be dated) while Malaysia submitted the second national communication in 2011 (too late for this research). Thus, the initial national communications from Pakistan and Malaysia were examined to see how they could help the CPI process. This examination would help future research as more countries complete national communications, as required under the convention, in due course. In terms of the growing needs of UNFCCC, in light of the Cancun agreements, national communications will become an important information resource as their frequency and rigour increase and offer greater opportunities for research.

Given the gestating history of CPI, a historical or archival analysis was not considered appropriate, as there is minimal detailed history of CPI in developing countries. The decision to undertake two case studies was based on providing a wider representation of CPI in a developing world context in order to highlight the variances of the institutional contexts of developing countries and illuminate a set of policy approaches that could be compared and contrasted. Developing countries will evidence much diversity in embedding CPI and it is important to analyse such contextual differences to gain an informed understanding. A singular case study would have been too narrow and anything greater than two would not have been covered in sufficient depth.

This research is focussed on the public policy process and was conducted in countries where the Federal government had substantial involvement in the planning process with very limited involvement of the private sector in climate policy (Chapter 4 and 5). The private sector is very important, however, the EPI and CPI literature and practice deal largely with the public sector, because policy integration at the national scale is the core matter, with input possible from the private and community sectors as well as from provincial governments, but that the major interaction and involvement occurs in integrated sectoral and program activities of the federal level of government. CPI as a whole of government *public* policy and administrative matter sets the broader framework and operating environment, within which private sector interests will engage with a typically sectoral focus. Furthermore, the lack of evidence and data on private sector in CPI limited inclusion as an element in this research. Once a better

understanding of the broader dimensions of CPI at national scale is developed, later research and policy work would be useful to explore the sectoral and sub-national aspects of CPI including private sector involvement.

1.6.2 Empirical research

The empirical research was conducted in Pakistan and Malaysia between February and May 2010. In total, 30 in-depth, semi-structured interviews were conducted with key stakeholders from government, civil society, academic and research organisations (Table 1).

These interviews were further complimented by qualitative document analysis to understand the national policy systems and experience with climate policy and its integration with national development. The document analysis was a continuous process that was done in combination with the interviews to allow for a more in-depth grounding of the national policy scale. This combination of approaches allowed for thorough analysis of whole-of-government CPI.

Interviewees were not a representative sample, but were purposefully selected to gain a range of perspectives from people deeply engaged in climate and related policy formulation and implementation. Responses were coded by country and role (national government, civil society, researcher etc.) to preserve anonymity. A feature of many interviewees is that they had been in different roles over a period of time, for example, having worked in both government and civil society or international development agencies. This increased the breadth and quality of many interviews, as individuals were able to discuss CPI and related matters from multiple perspectives.

As the research focussed on national policy systems i.e. structures and processes, people from the private sector were not included (as mentioned previously) so as to keep the focus on public policy mechanisms. Also, there is little evidence of engagement in actual policy development concerning CPI by private sector actors in the two countries, which may largely be a function of the early stages of the policy debate. However, it is acknowledged that the private sector is an important player in global and national efforts on climate change and sustainable development and the omission in this research is not intended to diminish their role and possible contribution. Table 1 describes the interview informants, organisations and the coding adopted to retain confidentiality of the interviewees. The interviews were coded as follows:

- i. Federal government policymaker (FG) – civil servants, departmental head, line agency officials and ministers from the federal government.

- II. Civil society official (NG) – professionals from environment and policy-related non-governmental organisations (NGOs).
- III. Research organisation (RO) – senior researchers from established research organisations.
- IV. Development partner (DP) – officials from international development agencies.

The interviews were sampled according to the major themes (Chapters 4 and 5) identified by the interviewees. This was purposefully done to allow the knowledge and experience of key policy-makers and researchers to identify and explain issues in embedding CPI at national scales. That is, the themes emerge from the perspectives of deeply engaged practitioners rather than predetermined through the survey instrument. This is consistent with the applied public policy and administrative focus of the research, and also reflects the recent and scant character of available literature in that themes and issues in CPI are not well developed already in previous work. The responses were then numbered and labelled under each theme. This was manually done and the need for any specific software like *Nvivo* was considered unnecessary given the amount of material and the researcher's close familiarity with the area of investigation. Any superfluous or unwarranted interview detail was not distilled any further. These themes were also checked with the literature to further ground the observations. There was a limited possibility of an "on-stage" effect in the interviews i.e. influenced or strategic interview responses but was not apparent in the view of the interviewer/author, who has significant experience as a former senior official in roles not dissimilar to the respondents. For further details on treatment of interview data and analysis, see Section 1.6.6.

The interviews were undertaken with the approval of the Human Research Ethics Committee of the Australian National University.

Table 1 Interview Informants

Pakistan			Malaysia	
	Informant	Organisation	Informant	Organisation
1	Ex- Minister for Environment (FG1)	Ministry of Environment	Development partner (DP1)	UNDP
2	Civil society official (NG1)	World Wildlife Fund	Development partner (DP2)	UNDP
3	Government official (FG2)	Economic Affairs Division	Government official (FG1)	Ministry of Natural Resources and Environment (NRE)
4	Development partner (DP1)	UNDP	Government official (FG2)	Physical Planning and Housing
5	Government official (FG3)	Ministry of Environment	Researcher (RO1)	Institute of Environment and Development (Lestari)
6	Government official (FG4)	Environment Protection Agency (EPA)	Researcher (RO2)	Lestari
7	Government official (FG5)	Planning Commission	Government official (FG3)	Malaysian Meteorological Services Department (MMS)
8	Government official (FG6)	Planning Commission	Civil society (NG1)	Malaysia Nature Society (MNS)
9	Civil society (NG2)	IUCN	Civil society (NG2)	Center for Environment, Technology and Development (CETDEM)
10	Development partner (DP2)	Ex-UNEP	Government official (FG4)	Ministry of Energy, Green Technology and Water
11	Government official (FG6)	Planning Commission	Researcher (RO3)	Lestari
12	Researcher (RO1)	GCICS	Government official (FG5)	Economic Planning Unit (EPU)
13	Development partner (DP3)	GTZ	Government official (FG6)	EPU
14	Researcher (RO3)	Ex-Secretary irrigation	Researcher (RO4)	Lestari
15	Researcher (RO2)	Ex-HBP	Researcher (RO5)	Lestari

1.6.3 Selection of case studies

Pakistan and Malaysia are the two developing countries that were selected as case studies for this research. The criteria for selecting case studies were:

- I. sufficient familiarity and knowledge of the countries either already or readily available, allowing interpretation of interview and other material
- II. access to resources and support for case study work
- III. having some record of pioneer initiatives on the environment and development, indicating at least the potential to act on CPI
- IV. national circumstances relevant to adaptation and mitigation, ensuring that interest in CPI is likely, at least in theory
- V. differences in developmental levels.

Sufficient familiarity and knowledge of the countries either already or readily available, allowing interpretation of interview and other material

The researcher (as is explained in detail in the next section) had an existing in-depth knowledge of the climate, environmental and development policy of Pakistan, which was one of the key reasons for the choice of the case study. This was particularly helpful in view of limited literature: access to networks and personal knowledge on development decision-making proved very useful in undertaking this research. Given the prevailing security situation in Pakistan, this familiarity was advantageous, as movement and access to sources would otherwise have been heavily restricted.

Access to resources and support for case study work

The choice of Malaysia as a second case study country was influenced heavily by the offer of a host institution, the Institute for Environment and Development (Lestari) at the Universiti Kebangsaan Malaysia, for the empirical investigation. Lestari is a leading environmental think tank in Malaysia and has access to the research and policymaking community and also houses many of the retired environmental and economic public policy officials. This availability to the relevant network helped tremendously in the undertaking of the research.

Having some record of pioneer initiatives on the environment and development, indicating at least the potential to act on CPI

In terms of content, the environmental policy developments and the country's participation in the international multilateral environmental process provided grounds for investigating CPI at the national scale. The assumption was that if a country has done well on some of the basic yardsticks of national and international policy developments, then it must have, at least, the capacity to undertake CPI and EPI. Pakistan had been a chair of G-77 and China³ in 1992 and 2007, and had participated in two important milestones in global environmental governance as chair of a big block of developing countries. The first was the United Nations Conference on Environment and Development (UNCED) meeting in 1992 and the second was the UNFCCC Conference of Party meeting in 2007, which was expected to lead to a comprehensive global agreement on climate change in 2009. At the national scale, Pakistan had produced pioneer environmental policies, such as Pakistan's national conservation strategy in 1992 (GOP-MOE 1992) followed by a positive trajectory of environmental policy developments in the country (see Chapter 3).

Malaysia was a founding chair of the United Nations Commission on Sustainable Development, a body that was set up to follow up the UNCED and the implementation of Agenda 21. At the national level, Malaysia has a decent history of environmental evolution, with the first federal legal framework on environmental pollution enacted in 1974 followed by a series of environmental policy developments (see Chapter 3). This national and international context provided sufficient grounds for exploring CPI in Malaysia.

National circumstances relevant to adaptation and mitigation, ensuring that interest in CPI is likely, at least in theory

With a population of over 180 million people, an economy strongly dependent on agriculture and the recent extreme weather events in the country, adaptation is beginning to be identified as a major environmental, economic and developmental challenge for Pakistan. Pakistan is a low-GHG emitter and so mitigation does not figure prominently in literature and policy. Malaysian GHG emissions per capita (tonnes CO₂eq/ per capita) are currently at 9.5 (Ministry of Natural Resources and Environment 2011), which is higher than GHG emissions per capita (tonnes CO₂eq/ per capita) from Pakistan, which is at 1.9 (GOP-PC 2010b). Malaysia has also announced a voluntary emissions reduction target of 40% from 2005 levels by 2020. Mitigation thus gains importance as a key issue in policy discussions, as was also evident through the

³ G-77 and China comprises 132 developing countries and was originally formed by seventy-seven developing countries, who were signatories to "Joint Declaration of the Seventy-Seven Countries" issued at the end of the first session of the United Nations Conference on Trade and Development (UNCTAD) in Geneva (<http://www.g77.org/doc/index.html>) accessed 17/11/2011)

interviews conducted. Malaysia promulgated a renewable energy law⁴ in 2011 to increase the share of renewable energy in the country. These national circumstances provide sufficient grounds for the need for CPI in Pakistan and Malaysia and the reason for exploring CPI at the national scale.

Differences in developmental levels

In economic terms, Pakistan and Malaysia represent an interesting contrast of developing countries. According to the World Bank's classification of developing countries⁵, based on a gross national income (GNI) per capita, Pakistan is a low middle income economy and Malaysia is an upper middle income economy. The per capita GNI of Pakistan is at USD 1050, while for Malaysia it is USD 7900⁶. This implies that the per capita GNI of Pakistan⁷ falls in the range of US\$1006–3975, while the range for Malaysia is US\$3976–12,275, the respective World Bank ranges for low middle economy and upper middle economy. Finance and resources are key ingredients of a country's capacity to respond to challenges like climate change, and this income variance suggests that the two groups of countries within the developing world will have a difference in capacity to respond to challenges such as climate change. This variance within developing countries, although not fully absorbed in the existing legal architecture of the climate convention is used as one of the criteria for exploring CPI in Pakistan and Malaysia. It was considered important to understand how countries within the developing world block, with their varying degree of economic development, are responding to CPI.

More details on the relevant background of Pakistan and Malaysia can be found in Chapter 3.

1.6.4 Professional experience of the researcher

The researcher has had approximately 20 years of experience in the field of climate, environmental and sustainable development in the Asia-Pacific region. The researcher has had in-depth exposure to national policy in Pakistan from his work at the Ministry of Environment and Ministry of Economic Affairs and Statistics Division (from 1995 to 2007) and has been involved as a lead climate negotiator for Pakistan. This involvement at the national scale and in

⁴ http://www.federalgazette.agc.gov.my/outputaktap/20110602_725_BI_Renewable%20Energy%20Act%202011.pdf (accessed 11/10/2011)

⁵ http://data.worldbank.org/about/country-classifications/country-and-lending-groups#Lower_middle_income (accessed 11/10/2011)

⁶ <http://siteresources.worldbank.org/DATASTATISTICS/Resources/GNIPC.pdf> (accessed 17/11/2011)

⁷ <http://siteresources.worldbank.org/DATASTATISTICS/Resources/GNIPC.pdf> (accessed 17/11/2011)

the global process provided the experience necessary to undertake an empirical investigation in Pakistan, where the CPI and EPI literature, and even general public policy literature, is very limited. Knowledge of the general conditions pertaining to developing country engagement in climate similarly assisted in communicating with and interpreting the data from interviewees, and understanding documentary materials in both countries. There was a limitation with the Malaysian case study, as the author did not have close experience with that country, but the experience as a senior official in Pakistan and the association with a leading think-tank in Malaysia provided a good opportunity to distil and ground the findings. These findings were discussed with the supervisory panel who had a good experience of the East Asian region. The researcher was careful to not allow personal experience and positions on matters being researched to interfere with executing interviews in an open and objective manner. One personal attribute that did influence the research was the researcher's interest in the developing world, which manifested in the focus of the thesis on such countries.

1.6.5 Document analysis

The thesis explored relevant literature including government documents, academic literature, UN reports, reports and research undertaken by civil society and renowned media sources. Pakistan and Malaysia had both completed the initial national communication in 2003 and 2000 respectively, the data for which were available, but somewhat dated. Malaysia submitted the second national communication in April 2011 and the interviewees would not discuss the contents when interviewed in April 2010 due to the Malaysian *Official Secrets Act* (Chapter 3). In Pakistan, the national communication data were very dated, and in the case of Malaysia, the recent data only became available in 2011, so this presented difficulties for research. The suite of relevant documents and literature, particularly on climate change, was a moving target, that is, published literature was limited and emerging and the research tried to work within such pressures. For Pakistan, the draft climate change policy was being finalised at the time of the research but was not available for public comment and analysis.

The policy literature on EPI and CPI was weak in Pakistan and Malaysia, specifically on climate. This is now an emerging research area and, in the next few years, is expected to increase in both countries: for Pakistan, particularly due to the strong imperatives for adaptation given natural disasters and reliance on agriculture; and for Malaysia due to its strong interest in green technology and the green economy drive.

1.6.6 Interview questions, treatment of data and synthesis

A number of key themes emerged from interviews with key informants (Table 1), from responses prompted by a set of semi-structured interview questions (see below). An important input of the research was working with raw interview data that allowed distillation of commonly recurring themes or issues where a number of interviews identified or discussed an issue in the form of a barrier, constraint or opportunity (Tables 2 and 3). Tables 2 and 3 are manual tabulations of raw data from the semi-structured interviews to identify commonly recurring themes from the responses of the interviewees. The first column represents the code of the interviewee and the remaining columns presents the emerging themes created from the responses of the interviewees, in which they identified an issue as a barrier, constraint or opportunity. The numbers in the 'emerging themes' columns (for example, 'institutional silos') represent the frequency with which the interviewees identified the issue as a barrier, constraint or opportunity. Frequency in Tables 2 and 3 refers to the shared concerns found across individual responses. The detail of how these issues are viewed by interviewees is explored in Chapters 4-6.

The interview data were manually coded and analysed, as use of qualitative analysis software was deemed unnecessary due to: (i) the relatively small number of interviews, (ii) fully recorded and manually noted interview data, and (iii) close familiarity with the policy domain allowing the researcher to sensitively interpret responses in the national and political context. These themes were compared with the relevant literature on environment, climate and development to ground the findings.

Identification of the themes contributes to highlighting the key issues and barriers perceived by the policy community in Pakistan and Malaysia. The themes are further explored and analysed in later chapters in the specific context of the two countries, but they also serve as a potential basis for comparative work in other national contexts.

The guiding questions used in the interviews were:

1. What policy, administrative and institutional mechanisms have been used to 'mainstream' climate policy in [country]?
2. Can you identify available descriptions and/or analyses of these?
3. What mechanisms are under current proposal or consideration?
4. In your view, what have been the key factors enabling or constraining the

development and implementation of these mechanisms?

5. Are there other sectors, or past programs, where policy integration was pursued and that you believe could inform mainstreaming of climate policy?
6. In terms of the current development of the international climate policy regime, what do you believe are the particular features proposed or needed to encourage mainstreaming of climate policy with development and other sectors?
7. With regard to the issue we have discussed, can you identify further individuals or groups who might have an informed perspective that might assist with this research?
8. Do you have further observations that you would like to make on matters we have not covered so far?

The questions were asked in a semi-structured manner to allow the interviewee to respond in a more flexible manner and raise other issues that they considered significant from their particular perspective. This was considered necessary for the research, as it was felt that this level of exploration at the whole-of-government level required flexibility to incorporate the wide experience of the interviewees. The interviewees responded to most of the questions; however, the details varied as it was left to the interviewees to respond to the questions they were most comfortable with or knowledgeable about. The interview questions were mostly collected in writing and, where possible, digital audio recordings were made. This was dependent on the sensitivity of the interviewees who did not want the interview to be recorded. The duration of interviews was between 45 and 60 minutes, tending to the latter, depending on the schedule of the interviewee.

Following ANU research guidelines, a research ethics clearance was obtained before proceeding with the fieldwork. The interviewees were informed in writing that this interview was for doctoral research, clarifying at the outset the researcher's role and providing summary details on the research. They were also informed that they could withdraw from the interview at any stage of the process and that no opinion or quote would be directly attributed to them without express permission. The transparency of this process, the ethics approval and the details provided helped the interviewees to remain focussed on the relevant subjects and questions proposed and assured them of discretion and privacy. In this way, the researcher was able to collect in-depth information from the experienced interviewees, who were very knowledgeable about the policy and research processes in Pakistan and Malaysia. As the researcher was provided with institutional support from Lestari and through his previous role

as a government employee in Pakistan, the clarification to the interviewees and the emphasis as an independent researcher prevented any misunderstanding of the researcher's role.

Table 2 Malaysian interview themes

Interviewee	Emerging themes										
	Information/ reporting	Institutional sites	Role of NRE	Role of plan	Energy focus	Sectoral policy	Growth/ competitiveness	Finance	Civil society engagement	Global multilateral process	
DP1	7, 14		20	15	24, 25, 26			16	23	17	
DP2	20		1	5, 21	13, 17	29				2, 8, 40	
FG1		10	16		5		2, 7	14		1	
FG 2			8	1		6					
RO1	19, 28			2	16	6, 25	14	10, 27		18	
RO2						9	7			11	
FG3	6	20	10, 15		17		26	18			
NG1		7, 16		26	5, 24	9		32	38	27, 34	
NG2	16, 20	17		25	22, 23, 46	18, 33, 50	30, 38	35		9, 11, 48	
FG4			9	6	3			7			
RO3	20	10						12		1, 17	
FG5	4			2				11, 13			
FG6		18			4, 5			21			
RO4							1				
RO5	7										

Table 3 Pakistan interview theme

Interviewees	Emerging themes										
	Information / research	Institutional silos	Capacity/ role of MOE	Laws / plans/ policies	Development focus: energy	Climate focus: adaptation	Finance	Civil society capacity/ engagement	Global multilateral process		
FG1	6	15	9	1			4				
NG1	15	14		3		1	17	10	5		
FG2	7			10	22				8		
DP1	20	4		17	2				22		
FG3	5	1				3					
FG4	7		3		3						
FG5	1	9		6							
FG6	16		6,12	7	8		11				
NG2		5	9	8		6		2			
DP2	18, 25	10, 19	17, 23				16, 24, 28		8		
FG6	6	4		3							
RO1	6		1, 3								
DP 3			9		10		12				
RO3	11	4		6							
RO2	2, 6		3, 4								

1.6.7 Structure of the thesis

The thesis is divided into three parts: Part 1 sets the conceptual background and theoretical context; Part 2 presents the empirical work from the case studies in Malaysia and Pakistan; and Part 3 links CPI theory, policy and practice through analysis and synthesis of research findings from the case studies and suggestions for future policy directions. Table 4 maps the research questions and aligns them to the chapters of the thesis in which each question is primarily dealt with.

Table 4 Research questions and thesis

	Research questions	Contribution in
1	What is the scholarly discourse on integrated climate change and sustainable development?	Chapter 2
2	In what ways do policy systems and processes at the national level respond to climate change and sustainable development?	Chapters 2, 3, 4, 5
3	In what ways can CPI learn from EPI?	Chapters 2, 6
4	In what ways do policymakers respond to climate change at the national scale to enable mainstreaming or CPI in the decision-making structures and processes?	Chapters 2, 3, 4, 5
5	What lessons can be drawn and are these lessons transferrable to other countries and levels of governance?	Chapters 6, 7

Chapter 2 reviews the (limited) CPI and sustainable development literature to determine how climate mainstreaming is defined and mainstreaming strategies suggested. It then surveys the EPI literature, which represents a longer-standing body of work, to identify the coverage of climate change and the kinds of policy administrative structures proposed, and to identify ways forward for research and policy on defining and operationalising CPI at the national scale.

This brings us to the empirical component of the thesis. Chapter 3 reviews the contextual background for the case studies, presents an overview of the climate and development challenges in the two countries and identifies the relevant structures and processes at the

national scale. This sets the institutional framework for CPI analysis in the next two chapters. Chapters 4 and 5 provide an in-depth review of CPI integration in practice in the two case study countries, Malaysia and Pakistan.

The final part of the thesis links CPI theory, policy and practice. Chapter 6 undertakes a synthesis of the results from the two case study countries using the framework of EPI and CPI. The structures and processes identified in the case study Chapters 3, 4 and 5 are then investigated against principles of CPI to identify: where the literature is deficient in the developing world context; the differences that exist between developing countries in their efforts to achieve CPI; and, based on the case studies, additional processes and mechanisms that enable CPI above and beyond those evident in the literature. Chapter 7 is the concluding chapter, which summarises findings from this research and offers suggestions for future research and policy directions.

Chapter 2: Mapping climate policy integration⁸

Political questions are often posed as technical questions that can be referred to experts without confronting the value differences that are the real origin of the conflict (Rayner and Malone 1998).

Climate policy in both its mitigation and adaptation dimensions is firmly a cross-sectoral and whole-of-government activity. However, such 'mainstreaming' or CPI has yet to be developed sufficiently either in the scholarly literature or in policy practice, which focus more on specific instruments, rather than on structures, processes and institutional reforms. This chapter will cover three areas. (1) The literature on CPI and sustainable development is explored to discover how climate mainstreaming or integration is defined in broad principle and in terms of suggested mainstreaming strategies (i.e. specific policy and administrative structures and processes). (2) The EPI literature, which represents a longer-standing and more substantial body of analysis and practice in policy integration, is traced to unearth the origins of EPI, show how mainstreaming and integration are defined, and describe the kinds of climate change policy and administrative measures anticipated. (3) Based on the discussion of the first two areas, ways forward for research and policy are proposed to better define and detail the implementation of CPI. This chapter lays the foundation for the empirical research on two developing countries, Pakistan and Malaysia, to explore CPI at the national scale.

2.1 Introduction

Sustainable development requires the integration of three broad policy domains: economic, environmental and social (Munasinghe 2003; Munasinghe & Swart 2005; Metz 2010). However, there is insufficient explication of how to integrate climate change with the similarly integrative imperative of sustainable development and other policy sectors within national policy processes. Current thought on CPI has been synthesised by scholars, such as Kok et al. (2008), who stress the need for the involvement of all relevant players but, like the rest of the literature, offer little instruction on how this might be done.

While the idea of governance for sustainable development emerged in the 1980s, there has been less than satisfactory resolution of these key ideas (Kemp & Parto 2005). The physical and economic impacts of climate change have dominated scientific and policy debates in

⁸ This chapter is an extended and updated version of work published as "Climate policy integration: towards operationalisation", a United Nations Department for Economic and Social Affairs (UNDESA) working paper, in 2009.

recent years; however, the relationship between climate change, sustainable development, governance and policy remains unclear. In particular, implementation of climate policy within the broader ambit of sustainable development requires specification of measures that can operationalise the general concept of governance: that is public policy and administrative mechanisms. While sustainable development includes climate change as a major issue, it also encompasses other closely related issues, such as poverty, biodiversity, land and water resources, human development, ocean management, and more.

The perceived need to integrate a climate change dimension across all areas of policymaking (i.e. CPI) has undoubtedly become more acute, but the evidence base is still weak and there are no accepted methods for achieving it (Urwin & Jordan 2008). This points to a significant implementation deficit. In particular, the relationship – whether positive, neutral or negative – between climate policy and sustainable development policy, and especially human and economic development policy in developing nations, remains unclear. International policy and science has dominated climate change debates to date; however, national and local level implementation is now emerging as a key issue. It is at the national and local scales that integrated policy implementation will occur through suitable policy and administrative arrangements, and global climate policy will need to support, encourage and help finance these efforts. At the same time, national and local scale initiatives are needed to implement international level goals. Governance for climate change is now becoming a non-optional parameter for pursuing serious action (Meadowcroft 2009), but this raises questions about the detail of implementation.

The application of a complex and contestable concept like 'sustainability' (Dovers & Handmer 1993) to discussions of climate change policy generates a series of issues surrounding the achievement of global equity and the financing of climate-oriented development through diverse national policy processes. This demands integrated analysis, drawing on the climate policy literature as well as on longer-standing discussions of sustainable development and public policy, to embed climate policy in a wider policy system: CPI.

Dovers (2005) defines climate change as a major issue in sustainability, but not a policy problem *per se*. Instead, climate change can be translated into an array of policy problems that will be differently defined and dealt with through variable policy systems and the structures and processes within those systems. It is a classic cross-sectoral issue, requiring consideration of policy and administrative mechanisms to formulate and implement whole-of-government responses. This invites focus on how different policy systems can or do handle policy integration. Climate is not the first policy implementation challenge requiring integration

across sectors, and while it has particular characteristics and needs to be considered in different national contexts, other policy integration experiences may yield insights. In a case study on Integrated land management (ILM) in Canada, Rayner and Howlett(2009:165) remark

“Successful policy integration poses significant challenges to policymakers. The provincial cases studies of Integrated Land Management described in this volume suggest three main lessons. First, integration is often a response to a long period of policy layering or drift that has resulted in a highly disorganized policy regime, with potential for generalized incoherence within and between policy goals and policy means. Second, policy integration will often pose formidable difficulties of multi-level governance. Third, the multiplication of new actors often outstrips the ability of governance mechanisms to cope. Responsive policy-making for large-scale complex policy issues such as ILM requires both sophisticated policy analysis as well as an institutional structure which allows problems to be addressed on a multilevel and multi-sectoral basis”

It is pertinent to note that this is a conclusion on the challenges involved in policy integration based on a study on ILM in Canada. Such studies represent the broad trend in literature to focus on developed countries. The available literature, as will be pointed out in this thesis, deals overwhelmingly with developed countries, providing very little material on policy integration, CPI and the broader dynamics of assessing the structures and processes involved in sustainable development decision-making in developing countries. This research attempts to fill this void.

The next section sets the context for the nature of the challenge as represented in the literature, particularly for developing countries.

2.2 A development response to the climate challenge

Climate change represents essentially a development issue – it is about changing the development path followed since the “industrial revolution”, which is heavily concentrated on use of fossil fuels and land-use change, to a low carbon and climate-resilient development pathway (Winkler et al. 2002; Depledge 2005; Ahmad et al. 2009; Metz 2010; Richardson et al. 2011). A mainstreamed or integrated approach is recognised by scholars and practitioners as necessary for dealing with climate change. For many developing countries, starting from development objectives and then describing paths for more sustainable development may be the easiest way to address climate change (Winkler et al. 2002). This is an important concept

and congruent with the approach taken here. For more detailed analysis on anthropogenic climate change see Metz (2010), Rockström et al. (2009), Hansen (2009), Richardson et al. (2009) and IPCC (2007b).

Environmental problems have been defined and recognised by developing countries in a North–South context (Banuri 1993; Najam 2005). Susskind (1994) rates the North-South conflict as one of the obstacles to global cooperation. Addressing developmental, environmental and international issues will require reshaping of traditional approaches – not from the old North–South perspective, but in a reformed international environment (Sachs 2008). The world is not ‘flat’, as Freidman (2007) argues. However, a new South is emerging that includes a high variance of developing and less developed countries that still need to grow in order to eradicate poverty and achieve a decent standard of living (Jackson 2009; UNDESA 2009; Collier 2010; Spence 2011). The North-South delineation, particularly in addressing climate change is rather simplistic as the ‘South’ and the ‘North’ comprise highly variable national contexts.

The principal challenge in developing countries is development and this requires a development model that is more climate-friendly and climate-resilient: that is, a clear notion of a sustainable development framework for addressing interrelated challenges in an interdependent world. Currently, proposals for CPI focus on the developing world in connection to sustainable development (Najam et al. 2003; Sathaye et al. 2007). The prevailing position advances the notion of sustainable development for developing countries as a lower emission development path. Halsnaes et al. (2008) advances sustainable development as a framework for integrated development and climate change in developing countries for the achievement of a lower GHG emission pathway and ancillary co-benefits that will contribute to development needs. This implies that we avoid future aggregate high emissions from developing countries through a new development pathway, while relying on efficiency measures to reduce developed country emissions. This implicit strategy may be insufficient to reduce total emissions, but is a key part of the current policy environment.

Integrated climate change and sustainable development is a field gaining attention as a lead mechanism for dealing with developing country emission problems. The chapter on ‘Sustainable development and mitigation’ in the fourth assessment report (AR4) of the Intergovernmental Panel on Climate Change (IPCC 2007b) represents a synthesis of recent work and concludes that coverage of such an approach for developed countries is weak. Analysis of both developed and developing countries is needed to differentiate how such an

approach can be designed and implemented in different contexts. The next section begins with a review of CPI and sustainable development.

2.3 Climate policy integration and sustainable development

Linkage between the environment and development was formalised in the 1990s via the idea of sustainable development (Dryzek 2005). Since then, climate change has risen to dominate environmental and sustainability agendas in research and policy. The 1992 UNCED and the 2002 World Summit on Sustainable Development (WSSD) provided a sharper political dimension to the climate policy and sustainable development discourse (Klein et al. 2005). However, climate policy and sustainable development have to some extent been separated in research and policy discussions, and thus a less integrated approach has been taken, in part due to the way in which the climate 'problem' has been defined as a separate area in research and policy, not connected sufficiently to related sustainable development issues. For more detail discussions on environmental history and discourses see Dryzek (2005), Diamond (2005) and McNeill (2000).

Climate policy involves two main areas of operation – mitigation and adaptation – which are addressed in a largely separate fashion within dominant scientific, policy and international regimes (those associated with the 1992 UNFCCC) (Cohen et al. 1998; Klein et al. 2005; Tompkins & Adger 2005; Swart & Raes 2007). This division has largely shaped the research and policy agenda on climate change since 1992. According to IPCC (2007a: 869,878), the definitions of mitigation and adaptation are:

Mitigation is an anthropogenic intervention to reduce the anthropogenic forcing of the climate system; it includes strategies to reduce greenhouse gas sources and emissions and enhancing greenhouse gas sinks.

Adaptation in natural or human systems in response to actual or expected climate stimuli or their effects, which moderates harm or exploits beneficial opportunities.

The difference between the two may not always be marked, as some mitigative energy conservation measures could be classified as adaptation options. For example local, low-energy water provision, also adapting to increased droughts. Adaptation, though considered from the outset in the UNFCCC, has been addressed actively only following the finalisation of the Marrakech Accords in 2001 during global climate negotiations. The separation of mitigation and adaptation, along with the lag in attention to adaptation, has contributed to

climate policy being dealt with in a less than integrated fashion and having a lack of comprehensive connection to other, relevant policy sectors.

The science of climate change and the evidence of human-induced cause now attracts strong consensus (Steffen et al. 2004; IPCC 2007a; Hansen 2009; Richardson et al. 2009; Richardson et al. 2011), but major policy challenges confront societies in formulating a response. These challenges relate to uncertainty about impacts, future social and economic conditions and the complex global nature of the problem (Tompkins & Adger 2005). Defining a national climate policy remains a challenge, and the construction of comprehensive national policies is a scarcely examined area. A focus is needed on operational policy and administrative measures at sub-national and national levels.

The move to link CPI with sustainable development is relatively recent and resonates with scholars who recognise development as a key driver of climate change (Kok et al. 2002; Winkler et al. 2002; Heller & Shukla 2003; Munasinghe & Swart 2005; Metz 2010). Climate change is not entirely an environmental issue, as the key drivers are social, economic and development patterns (Cohen et al. 1998; Moomaw et al. 1999), yet coverage has been dominated until recently by biophysical and environmental considerations. However, economic issues relating to climate change have gained increasing prominence (e.g. Stern 2007), and while social and policy issues have long been emphasised by some (e.g. Rayner and Malone 1998), overall they have only recently gained much attention.

Climate policy, in general terms, has largely been considered as mitigation through energy policy, as the energy sector is the prime contributor to GHG emissions. This has changed, and recent work on climate change considers various sectors and linkages with sustainable development. Klein et al. (2005) identifies three research questions in CPI:

- What constitutes a socially, economically and environmentally attractive portfolio of mitigation, adaptation and development policy and how can it be achieved?
- How can capacity be developed to seize opportunities and overcome constraints to implementing mitigation and adaptation options as part of sectoral policies?
- How can existing financial instruments for climate policy best be used in the broader context of sectoral investments, official development assistance and other policies aimed at risk reduction and sustainable development?

These three questions convey the dimensions of an integrated approach, but they focus on sectoral policy, which is one element in realizing CPI. Policy design issues *within a sector* are addressed reasonably well in the literature. For example, Halsnaes et al. (2008), in their work

on country case studies, show how different options contribute to a sustainable and climate-resilient trajectory in the energy and transport sectors in Brazil, China, India and South Africa. Najam et al. (2003) concludes that the case for integration is well established. The case for integration may be clear, but the issue of how to achieve integration *across multiple sectors* remains. This requires a shift in focus towards implementation, the systems of public policy, and the structures and processes of public administration required to implement the concept. The causes and impacts of climate change implicate almost every human activity, and thus a wide range of policy sectors and portfolios; therefore, policy responses must be a whole-of-government activity. So, while some advance on sectoral-level CPI is becoming evident, and is a positive development, the necessary and more difficult whole-of-government scale CPI task has received much less attention.

The next section begins by reviewing the discourse to date to discern the roots of this focus, tracing the idea of CPI within the climate policy literature and especially the syntheses offered by the IPCC.

2.3.1 IPCC assessment of climate change and sustainable development literature

The IPCC, established in 1988 as a scientific advisory organ to the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO), is an organisation of scientists that produces peer-reviewed literature relevant to climate change and provides the policy community with syntheses of prevailing scientific knowledge. The IPCC to date has produced four assessment reports, and coverage of the link between climate change and sustainable development began only with its third assessment report (AR3). Table 5 presents a summary chronology and synthesis of the evolution of coverage of these issues by the IPCC. The IPCC assessment report coverage evolved as follows: the first assessment report (AR1) focussed on climate plus impacts and cost-effectiveness; an additional focus on equity was introduced in the second assessment report (AR2); with a further added focus on alternate development pathways in the third report (AR3); and additional coverage of sustainable development in the fourth assessment report (AR4) (Banuri et al. 2001; Najam et al. 2003). We have a situation where the focus is not just limited to climate, impacts and cost-effectiveness but also to an added, later emphasis on equity, alternate development pathways and sustainable development.

Table 5 Evolution of climate change and sustainable development in IPCC

IPCC first assessment report (AR1; 1990)	IPCC second assessment report (AR2; 1995)	IPCC third assessment report (AR3; 2001)	IPCC fourth assessment report (AR4; 2007)
Climate + impacts	Climate + impacts	Climate + impacts	Climate + impacts
Cost-effectiveness	Cost-effectiveness	Cost-effectiveness	Cost-effectiveness
	Equity	Equity	Equity
		Alternate development pathways	Alternate development pathways
			Sustainable development

The first and second assessment reports (AR1 and AR2) did not address the linkage between climate change and sustainable development, nor, therefore, CPI. While in AR2, working group III had been asked to include sustainable development issues, substantial discussion of sustainable development was absent (Cohen et al. 1998). The AR3 launched the assessment of the formal linkage of climate change and sustainable development and analysed mitigation policy and the other contents of the report in the context of development, equity and sustainability (Banuri et al. 2001). The report's relevant chapter assesses the literature on the three issues affecting climate change mitigation – cost-effectiveness, equity and sustainability – and relayed the strong message that these are complementary in nature and can be a tool for policymakers if used in combination. The main message of AR3 was that development choices matter (Banuri et al. 2001; Sathaye et al. 2007).

Najam et al. (2003) offer three key conditions under which an integrated climate change and sustainable development approach could be realised in AR4:

- First, at the conceptual level, the trend exhibited in previous IPCC assessments needs to be maintained, and equity concerns – which had appeared as an emerging issue in 2AR and gained slightly more prominence in AR3 – need to be accorded a more pervasive, even central, focus in AR4.

- Second, at the analytical level, the examination of alternative development pathways that had begun during the AR3 process needs to be continued and expanded into AR4.
- Third, at the operational level, country delegates as well as IPCC experts have to match their rhetoric with a demonstrated will to make sustainable development a central component of the overarching assessment framework of the IPCC.

The AR4 assessed the nexus of climate change and sustainable development with expanded coverage of the drivers, pillars and connections of sustainable development and climate policy. It identified a 'climate first' approach in which mitigation is the essential objective, and a 'development first' approach in which sustainability is the key. As noted earlier in this chapter, this invites a focus on CPI. AR4 considered integration as an essential element of pursuing a climate-resilient⁹ development approach that addresses both issues of sustainable development and climate change. For effective implementation, mainstreaming of climate change issues in planning and involvement of relevant stakeholders – various government units, the private sector, non-government actors and civil society – are considered necessary. In governance, 'national characteristics', or national context, are an essential component of effective decision-making for both sustainable development and climate change mitigation. This recognises the crucial fact that policy responses must fit highly variable national contexts, which invites but does not deliver analysis of national policy systems (the focus of this research).

Building on the argument of AR3 that 'development choices matter', 4AR identified three major lessons for development pathways:

- Development paths as well as climate policy determine GHG emissions.
- New global scenario analyses confirm the importance of development pathways for climate change mitigation.
- Development pathways can vary by regions and countries because of different priorities and conditions.

This is the IPCC clearest communication of the climate-development link, and evolution in the country context. The fourth assessment report (AR4) highlighted the extensive literature on development choices but mentioned the limited scope of literature on the actual mainstreaming of mitigation considerations in development policies. It identified the weakness in local and national level research and the need for it to be strengthened to help understand

⁹ Climate resilient term has been used in this thesis, and can be taken to have the same general meaning as other terms such as climate friendly or climate compatible.

the relationship between climate change and sustainable development within nations, regions and zones in developed, developing and transition countries. For effective mainstreaming, 4AR concluded:

Mainstreaming requires that non-climate policies, programmes, and/or individual actions take climate change mitigation into consideration, in both developing and developed countries. However, piggybacking climate change onto an existing political agenda is unlikely to succeed. The ease with which mainstreaming is accomplished will depend on both mitigation technologies or practices and the underlying development path. Weighing other developmental benefits against climate benefits will be a key basis for choosing development sectors for mainstreaming (Sathaye et al. 2007: 694).

This centres on mitigation and is focussed on technologies or practices and underlying development paths; it does not deal with the policy structures and processes required. An adaptation mainstreaming literature is emerging, where mainstreaming is based on the argument that human vulnerability to climate change is minimised not just when climate change is mitigated or adaptation takes place, but also when the living conditions of those experiencing the impacts of climate change are improved (Huq et al. 2003). Resources and capacity are necessary for adaptation. Development thus gains importance not just in mitigation but also in adaptation. Does the definition and scope of mainstreaming currently evident in the literature cover all possible elements of successful mainstreaming?

Mainstreaming must be operationalised, but coverage in the literature tends to be more general and conceptual and does not address the elements of the policymaking process for enabling such an approach. Is the 'development first' approach a mainstreamed one? It aspires to a more integrated approach, but implementation of mainstreaming requires consideration across all policy sectors, as a whole-of-government activity. From a policy implementation perspective, what are the relative merits of a 'climate first' or 'development first' approach? How can decision-making be operationalised within such constructs, as policymakers in different national contexts face differing parameters for decision-making? AR4 suggests that a 'climate first' approach will not lead to proper mainstreaming into development policy and that a 'development first' approach is essential. A 'development first' approach does not guarantee that it would lead to practical and effective integration but is an essential starting point. This synthesis by IPCC requires further analyses and evidence of models of national policy systems that is the focus of this research.

The literature on mainstreaming is limited, fragmented, context-dependent and largely based on addressing principles and sectors rather than systems of policymaking. That is,

mainstreaming is not sufficiently analysed as a whole-of-government activity. AR4 (IPCC 2007b) undertakes analysis of mainstreaming in development and includes non-climate policy instruments and actions that are candidates for mainstreaming. However, as the synthesis in the report is focussed more on the policies and instruments, the review of structures and processes at national scales is not sufficiently addressed in AR4 (see IPCC 2007b:84). This is a major barrier to understanding implementation and addressing mainstreaming in national contexts. The operational problems for an integrated climate development approach in both developed and developing countries are shaped by national contexts of politics, finances, behaviour, institutional and policy capacities and immediate economic and development preferences. These factors are not adequately addressed in the climate change and sustainable development literature. In work on science and decision-making, Jasanoff et al. (1998) conclude that active communication and collaboration among multiple cultures or forms of life – bureaucratic, scientific, economic and social – are key requirements in moving from scientific to policy contexts. In climate policy, the science is now firmly established and economic discussion has commenced, but the social and especially bureaucratic (policy) cultures have been far less comprehensively explored. This thesis main focus is on the bureaucratic culture, that is, public policy and administrative capacities.

While the IPCC is a global scientific research agency that synthesises peer-reviewed scientific literature, it has been criticised for not effectively addressing the human and social dimensions of climate change (Newby 1993; Cohen et al. 1998). As noted above, AR3 and AR4 have advanced further, but not sufficiently into the realm of national policy systems (structures and processes) that is the focus of this research. This research does not delve into the governance and institutional challenges of IPCC and for more detailed discussions on IPCC process see Agrawala (1998a & b, 1999) and Siebenhuner (2002, 2003).

2.4 Mitigative and adaptive capacity as essential elements of an integrated response

The IPCC uses the term 'capacity' as a key enabling concept in implementing the transactional relationship between climate change and sustainable development. In reviewing the institutional and developmental context of climate change mitigation and adaptation policies, AR3 concluded that the capacity for implementing specific mitigation and adaptation policies depends on manmade and natural capital and institutions (IPCC 2007b). For effective integration across the areas of cost-effectiveness, equity and sustainability, the IPCC uses the term 'mitigative capacity', developed by Yohe (2001), as a way to assess the range of issues

that have emerged since AR2 (Banuri et al. 2001). Mitigative capacity and the congruent term 'adaptive capacity' are central to an integrated climate policy response. Adaptive capacity is defined as the:

... ability of a system to adjust to climate change (including climate variability and extremes), to moderate potential damages, to take advantage of opportunities, or to cope with the consequences (IPCC 2007a).

and mitigative capacity as:

... a country's ability to reduce anthropogenic GHG emissions or to enhance natural sinks, where the ability refers to the skills, competencies, fitness and proficiencies that a country has attained, and depends on technology, institutions, wealth, equity, infrastructure and information (IPCC 2007b).

The two concepts are relevant to CPI and the link between climate policy and sustainable development. Mitigative capacity is rooted in a country's sustainable development path (IPCC 2007b). The term 'mitigative capacity' follows the idea of 'adaptive capacity' developed in an IPCC workshop on adaptation in Costa Rica in 1998 (Yohe 2001). The concepts are similar as response measures, one to the causes of climate change and the other to its effects. A clear need for a response capacity is required, and can be defined as the ability to manage the causes and consequences of environmental change (Tompkins & Adger 2005).

Table 6 Determinants of adaptive and mitigative capacity¹⁰

	Adaptive capacity	Mitigative capacity
1	The range of available technological options for adaptation	The range of viable technological options for reducing emissions
2	The availability of resources and their distribution across the population	The range of viable policy instruments with which it might effect the adoption of these options
3	The structure of critical institutions and the derivative allocation of decision-making authority	The structure of critical institutions and the derivative allocation of decision-making authority
4	The stock of human capital, including education and personal security	The availability and distribution of resources required to underwrite their adoption and the associated broadly defined opportunity cost of devoting those resources to mitigation
5	The stock of social capital, including the definition of property rights	The stock of human capital, including education and personal security
6	The systems access to risk spreading processes	The stock of social capital, including the definition of property rights
7	The ability of decision-makers to manage information, the process by which these decision-makers determine that their information is credible, and the credibility of decision-makers themselves	The country's access to risk-spreading process
8	Public perception of attribution	The ability of decision-makers to manage information, the processes by which these decision-makers determine which information is credible, and the credibility of decision-makers themselves

¹⁰ Yohe & Moss 2000; Yohe 2001.

If capacity is the focus, does this imply that nations with the requisite capacities – both adaptive and mitigative – will necessarily undertake an integrated climate policy approach? The key issue when looking at the definition and determinants of response capacity is what degree and combination of these two capacities are needed for a country to pursue CPI and to integrate a climate change and sustainable development approach? Even if a nation meets the definitions and has all the determinants of adaptive and mitigative capacities, will it pursue a sustainable development path, or does it have the requisite capacity to pursue sustainable development? If a nation has both adaptive and mitigative capacities will it deal with climate change effectively?

Advanced nations with modern economies are less reliant on weather, and with a climate-resilient infrastructure and greater resources they are better able to cope with climate change and possess high mitigative and adaptive capacities. But such capacities have not resulted in the more climate-friendly behaviour in developed countries that climate science is suggesting is urgently needed. Australia and the United States of America (USA) are interesting examples of countries with high mitigative and adaptive capacity, particularly covering a range of determinants mentioned in Table 6. However, both remain on an unsustainable development pathway, relying heavily on fossil fuel resources, overexploitation of renewable resources – such as forests, fish and topsoil – and unsustainable consumption patterns (Diamond 2006). In sharp contrast, developing countries, in particular the least developed and small island states are particularly vulnerable to climate change and contribute little to global GHG emissions, and the capacity of these states will be stretched most severely by global environmental change (Biermann & Dingwerth 2004; Barnett & Campbell 2010).

Can we define *sustainable development capacity* inclusive of social, economic and environmental aspects? Would this be that a nation with good adaptive, mitigative and development capacities pursue an *integrated* climate change and sustainable development approach? At a more aggregate level, advanced developed countries have sufficient capacity in all the three pillars of sustainable development, but still need to push for a more sustainable development pathway and an integrated approach. It is clear that having the capacity to do something is a necessary precondition, but it does not guarantee action. Capacity alone – be it adaptive, mitigative or sustainable development – is insufficient for CPI (Dovers & Hezri 2010). Capacity only describes the potential to achieve outcomes, not the outcome themselves. Adaptive and mitigative capacities are not just independent principles but also in some ways complementary principles due to the integrated nature of climate challenge. This calls for reviewing adaptive and mitigative capacity not just in isolation but also in holistic manner. What sort of capacity should a country build – mitigation specific, adaptation centred, or both?

Yohe et al. (2007), in their assessment of complementary roles of mitigation and enhanced adaptive capacity, emphasise that climate risk cannot be addressed by mitigation alone. The implications for an individual country's competing policy choices are significant. Do individual countries have the right information basis for making such a judgment? Anecdotal evidence suggests not. Sen (1999: 57) articulated the importance of the 'informational basis' for practical policies:

The informational basis of normative theories in general, and of theories of justice in particular, is of decisive significance, and can be the crucial point of focus in many debates on practice policies.

In terms of an operational approach, the information basis of such a judgement in a normative 'development first' or 'climate first' context becomes essential. How does a finance minister, particularly in a poor country, decide how much of the required mitigation and adaptation capacity they should fund against other pressing priorities? The decision becomes important because the aggregate number of developing countries' future emissions will be high – it is not a matter for high-emitting and high-income developing countries alone; it is about the global future involving all countries. Work on mitigative and adaptive capacities, and on sustainable development capacity, that pays close attention to the required policy and administrative structures and processes for national implementation is limited, especially in terms of exploring integrated policy implementation of the general ideas.

The idea of 'capacity' is useful to focus attention; however, the (albeit limited) literature to date (Table 6) misses a crucial set of variables. Capacity in the sense of mitigation, adaptation or sustainable development requires the policy and administrative wherewithal for implementation – useable laws, organisational forms and cross-agency corrections, policy mandates, information-generating units and bureaucratic competence and resources. This gap in the notion of capacity further emphasises the need for attention to national-scale public policy and administrative systems.

2.5 CPI thus far

There is a growing understanding and appreciation of an integrated climate and development approach in academic discourse. However, the link with CPI at both the international and national level remains weak. The global climate policy process and the negotiation positions of developing countries are positioned on development, however, the resultant decisions of the global climate policy process do not substantially address development in conference outcomes (UNDESA, 2009).

As an example, adaptation has only emerged recently as an issue requiring attention, while energy access issues are not within the purview of mitigation discussions under the UNFCCC regime. The focus of discussions in the UNFCCC process is on GHG limitation, which allows a narrower remit on energy supply – the dominant GHG emitter - rather than a broader look at all the integrated dimensions of energy supply and demand in which case energy access becomes a key issue for many developing countries. Such a focus and interest covers developed countries and emerging economies with high emissions and not the wider developing countries that have low emissions and high levels of energy poverty. For poor, developing countries and the least developed nations, energy access remains a key issue. Given the scale of the climate and development challenge, the World Economic and Social Survey 2009 suggested a strong role of government and a clear strategy for dealing with energy, particularly energy poverty and access (UNDESA 2009). It is pertinent to point out that energy access issues have become an interest under the international initiatives launched by the UN Secretary General recently¹¹. However, these are new processes that were not initiated at the time of this research. While this thesis is not focussed on the UN climate process or the international discussions on energy and climate, a review of operational decisions of the climate regime would detail the rudimentary levels at which linkages on development, climate and CPI have been made. For more detailed discussions on climate regime and international processes see Grubb, Vrolijk & Brack (1999), Bodansky (1995), Yamin & Depledge (2004), Depledge (2005) and Young (2008).

Such interconnections – not just in energy and development, but in the wider dimensions of CPI across a whole range of sectors- embed an agenda for integrated policymaking at all levels. For example, a study on CPI in the European Union (EU) concluded that a more thorough integration with sectoral policies, such as energy, transport and agriculture, is required to achieve policy integration across sectors in the EU (Nilsson, Nilsson & Lars 2005).

‘Integrated policymaking’ is not a well-understood concept and has been identified in the literature as lacking clarity. Similar concepts have also been mentioned, including: coherent policymaking; cross-cutting policymaking; policy coordination; concerted decision-making and holistic government (Meijers & Stead 2004). While policy integration *per se* is not the subject of this research, in addressing CPI and links between climate change and sustainable development, it becomes a central issue (Robinson et al. 2006).

¹¹ <http://www.sustainableenergyforall.org/> accessed October 1st, 2012

Climate policy integration is linked to the wider issue of governance for sustainable development, where the matter is not just a technical and administrative one, but one that also requires societal decisions about benefits and burdens (Meadowcroft 2007).

Mainstreaming or integration has been proposed as a panacea for many cross-cutting challenges, such as the environment and gender, but its implementation is not an easy affair. The EU's experience of integrating climate change into sectoral policies demonstrates that mainstreaming requires resources, political will and time to achieve results on any significant scale (Yamin 2005).

Rayner et al. (1998) proposed that human choice lies at the core of climate change, and offered ten suggestions for policymakers to move from a purely emissions-reduction approach to a more informed decision-making model based on a social sciences perspective. Yet, in their suggestions, the national policy system, where the bulk of the implementation task is located, is not directly addressed as a major issue. The argument in this thesis is that integration does not take place in a vacuum – it happens within functioning policy systems at global, national and sub-national levels. Implementation can only be analysed when enough models of structures and processes of national policy systems have been researched, debated and extrapolated. The literature is weak in this area. Dovers & Hezri (2010) identified a lack of connection between the adaptation literature and longer-standing, potentially useful policy theory and practice, and on adaptation policy found a clear linkage to mechanisms for policy and institutional change missing. Michaelowa & Michaelowa (2007) found the linkage between climate policy and development to be very limited and highlighted the weak role of the clean development mechanism (CDM) in terms of poverty alleviation and sustainable development.

Work on climate change and sustainable development has mostly examined sustainable development through a climate change lens, rather than the other way round (Robinson et al. 2006). Most work of this kind has been confined to single sectors or has been limited to a particular mitigation option (Halsnaes et al. 2008; Ribeiro & Andrade De Abreu 2008; Winkler et al. 2008). Furthermore, most mitigation thinking is primarily national and/or sectoral, while most adaptation work is local, an observation also made by Swart & Raes (2007). Again, whole-of-government scale and integrated national policy aspects are often overlooked.

The OECD (2005) undertook a review of six countries – Bangladesh, Egypt, Fiji, Nepal, the United Republic of Tanzania and Uruguay – to understand the linkage between climate change and development. The study concluded that: climate change is already affecting development; climate change impacts may need consideration in development planning; development assistance should be diverted to climate-sensitive sectors; and development activities normally

overlook climate change and even climate variability. This indicates that, with respect to climate change, integration across government policy systems is currently insufficient. Mainstreaming or integration, despite often being advanced, is weak in implementation.

Given the limited coverage of CPI in available literature, we might look elsewhere to study similar policy sectors for further insights. While sustainability *per se* is not the subject of this paper, it is instructive to consider the underlying attributes of policy problems in sustainability identified by Dovers (1997), which apply particularly to climate change as a policy problem:

- broadened, deepened and variable spatial and temporal scales
- often cumulative rather than discrete environmental impacts of human activities
- complexity within and connectivity between problems, both within and across the three areas of environment, society and the economy
- pervasive risk and uncertainty, and a lack of quality information
- systemic rather than simple problem causes embedded in patterns of production, consumption, settlement and governance
- lack of available, uncontested research methods, policy instruments and management approaches
- significant assets not traded in formal markets and thus not assigned economic value
- poorly defined policy, management and property rights, roles and responsibilities.

These attributes apply to sustainable development issues and complex environmental problems generally. Climate change is a classic sustainable development problem and the above attributes invite policy integration – policy responses must go beyond single sectors and be coordinated across sectors. Indeed, policy integration has been discussed and pursued in sustainability for some time, and we will now explore the EPI literature to see how integration is defined and analysed, and whether this longer-standing subset of sustainable development theory and practice can contribute to the CPI debate.

2.6 Environmental policy integration

Environmental policy integration remains a core sustainable development principle (Lafferty & Hovden 2003) and represents a significant area of thought on integrating environmental, social and economic policies. Environmental policy integration emerged in the 1970s in industrialised countries, especially those in Europe, and was incorporated into the World Commission on Environment and Development and Agenda 21 (Lafferty & Hovden 2003; Nilsson & Persson

2003; Persson 2004; Lehtonen 2007; Nilsson et al. 2007; Jordan & Lenschow 2010). Integration of environmental, social and economic considerations in policy is a core principle of the Rio Declaration and Agenda 21 (United Nations 1992). Despite the severity of the environmental challenges and incorporation of the environment as a core element of policy intervention formally identified in the Brundtland report, the fulfilment of the objectives of EPI are yet to be achieved (Jordan & Lenschow 2010). While the agenda of environmental policy has mushroomed in the past three decades, sectoral policymaking largely remains business-as-usual, with environment concerns on the margins (Nilsson et al. 2007).

Environmental policy integration comprises two essential aspects – policy and integration – both of which are key requirements not just in environment and climate change, but for other major public policy issues, such as gender and health. Underdal (1980) identified integrated policy as being where constituent elements are brought together under a single unifying conception. Lafferty (2004) identifies EPI as a ‘fuzzy’ concept with a wide variety of interpretations, and the EPI literature is not unanimous in its definition. Lafferty & Hovden (2003: 9) define EPI as:

- *The incorporation of environmental objectives into all stages of policymaking in non-environmental policy sectors, with a specific recognition of this goal as a guiding principle for the planning and execution of policy.*
- *Being accompanied by an attempt to aggregate presumed environmental consequences into an overall evaluation of policy, and a commitment to minimise contradictions between environment and sectoral policies by giving priority to the former over the latter.*

This definition is based on the integration of sectoral and environmental objectives. Beneath this broad construction lies a definitional issue over the exact meaning of ‘environmental objectives’ and whether the focus is on pollution, nature conservation, environmental health, etc. In addition, the actual meaning and implementation depends on how the concept is defined within the national operating context and the problem it is trying to address. But we can consider the transfer of the idea to climate policy while recognising the need for further clarification. At a general level, replacing the word ‘environment’ with ‘climate’ in the EPI definition above serves to construct a workable definition of CPI. Environmental policy integration has been explored for longer what CPI has more recently proposed, and thus could be expected to furnish insights.

Various structures and processes relating to EPI have been established in a number of developed countries. Table 7 (Nilsson & Persson 2003; Connor & Dovers 2004; Persson 2004; European Environment Agency 2005; Ross & Dovers 2008) provides examples of the sort of

structures and processes covered in the EPI literature, and implemented in some jurisdictions, mostly in developed countries.

Table 7 Examples of structures and processes identified in the EPI literature¹²

Structure	Process	Country
Sustainability policy units in first ministers' department; sustainability committees of the cabinet	Integrated appraisal of policies & programs; periodic evaluation of policies and programs; greening of government activities	Several states and territories in Australia
Parliamentary Commissioner for the Environment	Independent commentary, research and review	New Zealand
Various mechanisms	Strategic environmental assessment (of higher-level policy proposals in non-environmental sectors)	Various countries, especially in the EU under the Strategic Environmental Assessment Directive
Committee of State Secretaries for Sustainable Development (green cabinet); Council for sustainable development	Interdepartmental management; coordination	Germany
Codification of sustainable development in statute law	Requirement to consider in non-environmental agencies' decision-making	Various countries (e.g. +120 statutes in Australia)
Sustainable Development Unit; environmental advisory council	Guidance and integrated policy appraisal	United Kingdom
Committee for ecologically sustainable development	Sustainable development reports; national strategy for sustainable development; environmental accounting	Sweden
National Councils for Sustainable Development (and equivalent bodies)	Highly variable: input into national development plans, cross-sectoral policy coordination, input into budget formulation	70+ countries (e.g. Belgium, United Kingdom, Ireland)

¹² Nilsson & Persson 2003; Connor & Dovers 2004; Persson 2004; European Environment Agency 2005; Dovers & Ross 2007.

Table 7 is not comprehensive in detail or coverage, and more examples of actual structures and processes aimed at integrating the environment across other policy sectors exist. However, this sample indicates the type and extent of measures described in the literature and implementation practice. Away from the environment, more options are likely to exist and have barely been assessed for their relevance to climate policy, however, here we limit ourselves to EPI. These examples serve to indicate the direction in which discussion on CPI might take, that is, beyond stating that integration *should* happen to how it *could be implemented* in a public policy and administrative sense, embedded in the national and sub-national formal jurisdictional policy systems that are the prime location of policy design and formulation.

While both developed and developing countries have numerous environmental and sustainable development policies, plans or programs, real evidence of the environment as a key element in national policy is still weak. However, some exceptions can be found, for instance, in the EU, constitutional commitment is provided for EPI via the Sixth Environmental Action Plan, the Cardiff process, a full-scale EU program to integrate the environment and sustainable development into respective policy areas and an EU sustainable development strategy (Lafferty & Hovden 2003; European Environment Agency 2005). In a more recent review of the performance of the EU in terms of EPI, Jordan & Lenschow (2008:26) found levels of integration still far from what was envisioned by Brundtland and state that:

... the ambitiousness of the commitment to EPI has moved up and down over time, depending on the political preferences of key actors and the nature of economic framework conditions. It has not been a one-way modernisation process with an ever-improving performance; rather EPI has been fiercely debated, with phases of successful integration as well as phases of retreat.

There is a substantial body of literature on EPI and national processes, and experience from the EU explains that while the literature has progressed significantly, implementation is still contested and challenging in such established domains. The interest for the purposes of the present chapter is the essence of the notion and whether it can contribute to advancing our understanding of CPI. The possibility is that this more advanced area of thought and practice can 'fast track' development of CPI.

Two significant issues emerge from consideration of the EPI literature. The first is that, as opposed to the focus of the CPI literature on developing countries, the concentration of research on and policy implementation of EPI overwhelmingly relates to developed countries, particularly in Europe. Given that pollution is an aftermath of industrialisation and growth in the use of fossil fuels, the focus of EPI in developed countries has been on the environment rather than development. In developing countries, the predominant EPI literature and practice applied largely in European countries becomes of questionable utility. This literature uses the environment as a starting point for integration and becomes problematic on application to developing countries, as development and poverty eradication are more likely to be effective entry points for any useful policy integration.

Second, there is surprisingly little attention paid to climate change in EPI. This is particularly interesting since climate change acquired an international status following the publication of the First Assessment Report of IPCC (1990)¹³ and realization of a framework treaty on climate change in 1992. And, it would be expected that this would become part of EPI research and practice. However, this did not happen and even more recently, with the surge in research on climate change issue with publication of major seminal works like the Fourth Assessment Report of IPCC (2007) and the Stern review (2007), there was hardly any consideration of climate change in the EPI literature. The EPI literature had important reasons –not just due to increasing research popularity of climate change, but also its strong linkage to sustainable development – to address climate change issue. In essence, climate change is a core problem in sustainable development, the domain from which EPI emerged, so it would be expected that the EPI literature would deal with climate issues. Yet this is not the case. For instance, assessment of energy systems and EPI could be partially counted as relevant to climate change; however, integrated mechanisms of dealing with climate change are absent from the literature on EPI, which has largely focussed on agriculture, air pollution, energy, fisheries, environmental impact assessment, environmental monitoring and green budgeting. This observation is consistent with Janicke & Weidner (1997) seminal work across thirteen developed and developing countries, in which they identify climate protection as a missing element in environmental policy.

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http://www.ipcc.ch/ipccreports/1992%20IPCC%20Supplement/IPCC_1990_and_1992_Assessments/English/ipcc_90_92_assessments_far_overview.pdf (accessed October 10th, 2012)

The present chapter is not meant as a criticism but a constructive critique and use of the EPI literature; and invites attention to the fact that it has not dealt with climate change although there were reasons for it to do so. Was it assumed that climate change would develop as a separate concern? Have uncertainties around climate change science deterred attention? Or were climate policy discussions unaware of the evolving EPI field? Whatever the reason, it would appear an appropriate time, in addressing climate policy, to consider the insights and examples of integrative structures and processes offered by EPI – a body of theory and practice with a longer history and more substantial evidence. This research finds EPI as a useful model to understand the nascent field of CPI and acknowledges the inherent difficulty of policy integration in a bureaucratic system where portfolios and structure align with sectors in which EPI is both a mildly positive example and the only available analogue for CPI. The next section offers a way forward for CPI using examples of major forms of EPI structures and processes that could guide CPI.

2.7 CPI – a way forward

Sustainable development objectives should be incorporated in the terms of reference of those cabinet and legislative committees dealing with national economic policy and planning as well as those dealing with key sectoral and international policies. As an extension of this, the major central economic and sectoral agencies of governments should now be made directly responsible and fully accountable for ensuring that their policies, programmes and budgets support development that is ecologically as well as economically sustainable
(WCED, 1987:314)

This quote reminds us that policy integration has been recognized for over two decades as essential. The previous sections have detailed the necessity of establishing CPI mechanisms, an issue still in the embryonic stage, and noted the more mature body of sustainable development and EPI literature and practice, which may be a repository of both normative and empirical examples of integrative ideas. Institutions are an important part of integration mechanisms (North 1990; Young 1990, 2002, 2008; Connor & Dovers 2004). This chapter makes the case that the structures and processes established under the EPI, and the larger sustainable development mechanisms, provide a useful reference point. For CPI to emerge as a useful policy approach, it

needs to be combined with other suitable national policy mechanisms relevant to country context, emerging from EPI and other integrative mechanisms, to avoid duplication and redundancy with EPI and other policy structures.

The CPI literature has not considered actual public policy and administrative mechanisms as the EPI literature has done. For example, the description of vertical and horizontal integration (Lafferty & Hovden 2003) invites a focus on the structures and processes of national decision-making cycles. What are the mechanisms that can drive integration *vertically* (across local, provincial and national governments) and *horizontally* (between policy sectors within one layer of government)? Both are relevant to CPI. If we are to deal with climate change in an integrated manner, we need to advance from science, from theoretical models, from a co-benefits approach, and build towards structures and processes for national policy development to implement CPI. For this research and its focus at national level, the question of horizontal integration is a prime concern.

Climate change emerged as a late offspring of environmental concern and represents a fundamentally cross-sectoral issue that embraces the full range of economic and development activity (Ross & Dovers 2008; Hulme 2009; Metz 2010). The origins and experience with EPI offer examples and insights. For instance, comparing the examples of air pollution that EPI has to deal with and GHG that CPI has to address may provide insights. While the former remains limited to the pollution problem and can be dealt with through the 'polluters pay' principle, applying the same principle to GHG becomes more problematic, given the scale and focus of the challenge. Establishing a carbon price in its own right, while necessary, may be an insufficient mechanism to address the scale of the challenge (Stiglitz 2005; Hulme 2009; UNDESA 2009).

CPI suggests comprehensive climate policy frameworks. Various developed countries have emissions trading schemes rather than a comprehensive climate change policy; however, this is beginning to slowly change. For example, the climate change policy measures announced in Australia, which are currently undergoing a parliamentary approval process, include a price mechanism, development of renewable energy and addresses the land use sector¹⁴. Emissions trading schemes focus largely on the experiences of advanced countries and, in most cases, are inappropriate for the policy framework and capacities of most developing countries (Young 2002;

¹⁴ <http://www.climatechange.gov.au/government/reduce.aspx> (accessed 26/9/2011).

Gupta 2008; UNDESA 2009). A limited policy approach like this has an effect on the resultant administrative mechanisms that remain narrowly focussed and arguably short-sighted, and thus fail to deal with a transformative challenge like climate change. Emissions trading strategies could be a part of a climate change strategy and not *vice versa*.

Climate change policies have started to emerge in many developing economies, such as Pakistan, China, Indonesia, South Africa and India, while emissions trading policies are appearing in more advanced nations, such as those in the EU. How these policies are affecting the resultant administrative mechanisms is largely unexplored territory, and an area that research and practice needs to address.

On the adaptation front, integrating with development becomes crucial as it helps address vulnerability (Haq et al. 2003); combined mechanisms and administrative structures and processes have to be designed to address both adaptation and development issues. For example, health policy needs to look at issues like malaria and other climate-sensitive diseases as it designs a comprehensive health policy, and consultation with environmental officials becomes a requirement. Any integrative mechanism, such as an interdepartmental committee, must ensure that addressing climate relevant diseases are part of the policy package. The connections of goals, functions and processes across government to increase coordination and effectiveness have become a strong theoretical and practical focus in public policy and administration (Ross & Dovers 2008), but are missing or inadequate in climate policy literature and practice.

Examples of structures and processes identified in Table 7 – such as committees for ecologically sustainable development, national councils for sustainable development, green budgeting, integrated appraisals and interdepartmental coordination – are useful mechanisms that might not only be created for CPI, but may also be used for ensuring that a cross-cutting issue like climate is addressed within existing structures and processes. The design challenge is to ensure that there is no duplication in such roles, and if one committee or council can address both issues (the environment and climate), these are not replicated for the sake of creating a specific climate policy mechanism.

Processes, such as sustainable development reporting, a national strategy for sustainable development and environmental accounting, are already in place (see Table 7). Engendering such

processes requires extensive consultation at both vertical and horizontal levels, and an assumption would be that cross-cutting issues like climate change might be included in these processes. The evidence base for such integration remains weak and further research is required in areas analysing national sustainable development processes and their linkage with CPI. Both national and global processes provide useful starting points for the CPI process, which needs to be engendered (see chapters 4 and 5). A rich repository of information is generated in these processes, and CPI must not only use such processes, but also engender its own specific process.

Strategic environment assessments (SEAs) are undertaken in many countries; they provide a useful repository of assessments of environmental challenges and associated costs. The notion of instruments, such as SEAs, is not only relevant for the sort of information they generate, but also how the process is integrated within the government. The clarity on the objectives and focus of such instruments need to be established and the literature suggests that this is not the case. For example, in an assessment of SEA literature and policy practice largely across developed countries, SEA specialists are still debating the core focus of SEA – environmental policies, sectoral integration, public participation or sustainable development – and establishing clarity may help to engender processes in government systems (Bina 2008; Nilsson & Persson 2008; Jordan & Lenschow 2010).

The information generation role of SEAs for environmental decision-making is recognised in policy practice and has been used in both developed and developing countries (Bina 2008). For example, the Pakistan Strategic Environmental Assessment (2006) provides an estimate that environmental degradation costs the national economy approximately 6% of gross domestic product (GDP). However, the country lacks any detailed accounting for mitigation and adaptation measures. More accurate and reliable estimates are lacking for mitigation and adaptation at national scales and need to be undertaken to allow more informed decision-making to engender CPI. Regarding climate, processes such as the Garnaut climate change review (2008) undertaken in Australia have only recently started to emerge. The detail information thus provided would advance CPI if other countries undertake similar reviews (see Chapter 6). Such reviews need to be based firmly within varying national contexts with the overall objective of addressing sustainable development in a comprehensive manner.

Many countries have already started establishing mechanisms such as cabinet committees and national councils to advance climate policy, which need to be further engendered and institutionalised, depending on national contexts and circumstances. The key challenge remains in translating these high level mechanisms into real decision-making and practice at national levels. The evidence base is very weak and many committees remain static organs, meeting rarely or not at all and devoid of any substantive on-ground policy action and follow up. These issues are explored in Chapters 4 and 5.

Howlett & Ramesh (2003) characterise gaps between legislative intent and administrative practice as a major reason for policy failure. As an example, Australia became one of the pioneers in establishing the Australian Greenhouse office (AGO) in 1997, now a separate department. However, Australia continues to be one of the highest per capita emitters of GHG in the world and the usefulness or otherwise of such a department has not been explored. Establishing a department, mechanism or structure will not automatically lead to something desirable; this process has to be followed up adequate implementation.

Climate policy integration will not occur in a vacuum, but within functioning policy systems at the national level. Effective policy will require greater attention to the public policy and administration mechanisms than has been seen to date. That is to be expected, as most attention over the past two decades has been on the *science* of climate change. In future, climate change *policy* is where the most attention will be needed.

Climate policy integration mechanisms are appearing, but are scarcely identified and rarely analysed in the literature. Environmental policy integration offers more substantial examples, but they require analysis for their efficacy *per se* and for transferability to CPI. This suggests a program of empirical work for this thesis. There are six closely connected tasks for this research:

1. Understanding typical forms of EPI or CPI that are available or in existence.
2. A more purposeful survey and identification of current or proposed policy and administrative structures and processes that may advance CPI across national contexts.
3. An empirical investigation into policy and administrative structures and processes, whether existing or proposed, in national contexts, to provide worked examples of possible strategies.

This investigation should encompass a variety of stages of development and span varying

political, social, biophysical and economic contexts, and should look for a connection with EPI and other existing mechanisms.

4. The investigation above will furnish the empirical analysis of CPI in developing countries to bring out the complexities of both research and policy where the CPI and EPI literature is mostly written and analysed in the developed world.
5. A more purposeful analysis of the links between climate change and sustainable development in countries to gain insight into the wider political economy context.
6. Investigation of Global climate and other policy processes, to the extent that these are identified as supporting or constraining CPI at a national scale.

These tasks establish a large and complex research agenda; some aspects of this can be pursued here in defined national contexts. In undertaking such research, care is required to undertake comparative policy analysis in a manner sensitive to both the limits and potential of lessons drawn across diverse contexts (Rose 2005). These tasks could begin with a review of existing structures and processes at national scales. As explained in Chapter 1, these tasks will be fulfilled through five research questions that touch on the theory and empirical case study work on CPI in Pakistan and Malaysia. Chapters 3, 4 and 5 now investigate CPI at the national scale in Pakistan and Malaysia.

2.8 Conclusion

Climate policy integration, along with the closely associated issue of linking climate change and sustainable development, has been widely accepted as necessary. Climate change is a complex issue driven by economic growth based primarily on fossil fuel sources and development, and requires innovative approaches that incorporate multiple policy sectors. The fundamental argument for an integrated approach has been made in the literature, yet it has not progressed sufficiently in terms of implementation.

The literature on climate change and sustainable development is still evolving and has accelerated since the publication of IPCC 3AR. Most work is confined to single sectors or to a particular mitigation option, rather than to considering systems of policymaking as a whole-of-government

activity. This is a major barrier not only in understanding implementation issues but also in embedding CPI in national contexts.

Broadly, the meaning of EPI and CPI are similar. However, the bodies of literature on both topics are incomplete: CPI in the detail of implementation on a national scale; and EPI in terms of climate change as a focus as well as its concentration on developed countries. Nevertheless, the EPI literature and practice are more advanced in proposing, describing and analysing actual policy and administrative structures and processes, and these provide a means of hastening consideration of CPI.

The chapter argues that policy integration should be seen as a core topic in climate change debates, and that EPI can point to more practical and focussed ways forward. Central to this is maintaining a focus on the congruence, or otherwise, of climate change and sustainable development, consistent with the proposition that any climate policy that does not take a comprehensive approach to development, whether in rich or poor countries, will struggle to take hold.

Chapter 3: Setting the case study context: Pakistan and Malaysia

There is a dearth of literature on national experiences in climate policy, particularly in developing countries, resulting in a lack of clear understanding on the barriers and opportunities of pursuing an integrated climate and development approach. We examined two developing countries, Pakistan and Malaysia, as a basis for understanding how the national policy systems are addressing and might address climate policy in different contexts. The investigation builds on the theoretical underpinnings of EPI, sustainable development and policy integration literature, from a public policy and administrative perspective (Underdal 1980; North 1990; Lafferty & Hovden 2003; Dovers 2005), which was outlined in Chapter 2.

The two countries are not among the few countries where policy integration, or indeed simply climate policy, has been documented already, such as developed and major emerging countries. Neither are the two countries at the forefront of climate policy debates; however, grouped with many other, less examined countries, we have a significant portion of the world overlooked. Unlike Sweden, for example, where the national policy system is conducive to integration (Nilsson et al. 2007), Pakistan and Malaysia represent less conducive settings as a developing and an emerging economy respectively.

Developing countries provide an interesting context to explore CPI. There is no universal definition of a 'developing country', but according to the World Bank, low-income and middle-income countries are generally referred as developing countries¹⁵. This research thus explores two types of economy – a lower-middle income economy (Pakistan) and an upper-middle income economy (Malaysia)¹⁶ – and provides an interesting contrast between an industrialised East Asian economy and a largely developing South Asian state with high levels of poverty. Pakistan is a predominantly agricultural economy focussed on moving from agriculture to manufacturing, with poverty alleviation a key policy goal in which issues of energy access and adaptation become noteworthy.

¹⁵ <http://data.worldbank.org/about/country-classifications> (accessed 27/7/2011).

¹⁶ http://data.worldbank.org/about/country-classifications/country-and-lending-groups#Upper_middle_income (accessed 27/7/2011).

Mitigation is not a priority. Malaysia aims to become a high-income economy, moving from manufacturing to services, and thus has a focus on industrial transformation and growth. Mitigation is a relevant issue. These needs require a marriage of different set of institutions and systems to generate and sustain a low carbon and climate-resilient development.

Investigation of two countries versus a single country focus increases the breadth and applicability of the research through contrasting experiences, and allows exploration of how the context of and strategies for CPI may differ across national settings. Both countries have a federal provincial or state structure with strong central planning mechanisms, which in turn implies a clear leading role of the government in providing policy directions. Understanding the role of government and its associated structures and processes for national implementation, therefore, remains a key requirement in identifying, analysing and extrapolating any trends in CPI.

This chapter provides the context for the empirical case work in Pakistan and Malaysia, which will explore the existing or emerging CPI mechanisms –structures and processes – at the national scale in the two countries. This chapter provides the background and the relevant institutional context for investigating CPI in both countries: first in an overview of the climate and development challenge in Pakistan; second by setting the context for integration in practice; and third by repeating the context in relation to Malaysia.

3.1 Pakistan

Pakistan is a country with a land area of 796,095 km² and is located in South Asia; with India on the east, China on the northeast and Iran and Afghanistan on the west. With a population of 184 million, it is the sixth most populous country in the world. Approximately 62% of its population resides in rural areas. The country has a federal structure and consists of five provinces, a federal capital territory and a federally administered tribal area. The country was under British rule and separated from India as an independent country in 1947. The immediate resource constraints and conflict with India over Kashmir increased the role and power of the army in the country (Jalal 1995). Pakistan has not been democratic for much of its existence and the military has dominated its political history (1958–70; 1977–85; 1999–2002) with intermittent periods of civilian rule (Adeney 2007). In 1970, a major portion of Pakistan, known as East Pakistan, became a new independent country, Bangladesh. Pakistan is now part of the global 'war on terror' with its

military involved heavily in operations against the insurgents. Table 8 is a basic fact file on Pakistan including a summary of key socio-economic indicators.

Table 8 Fact file on Pakistan

Fact file on Pakistan ¹⁷	
Provinces	5 provinces: Punjab, Sindh, Khyber Pakhtunkhwa (formerly North-West Frontier Province), Baluchistan and Gilgit-Baltistan; 1 territory: federally administered tribal area; 1 capital territory: Islamabad Capital Territory
Country classification	Low income
Constitution	12 April 1973; suspended 5 July 1977, restored 30 December 1985; suspended 15 October 1999, restored in stages in 2002; amended 31 December 2003; suspended 3 November 2007, restored 15 December 2007; amended 19 April 2010
Legal system	Based on English common law with provisions to accommodate Pakistan's status as an Islamic state; accepts compulsory ICJ jurisdiction with reservations
Key social and economic indicators	
Population	184,404,791 (July 2010 est.)
GDP (in PPP)	US\$451.2 billion (2010 est.)
GDP per capita	US\$2400 (2010 est.); population below poverty line 24% (FY05-06 est.)
Economic structure	
GDP composition	Agriculture: 21.8%; industry: 23.6%; services: 54.6% (2010 est.)
Labour force by occupation	Agriculture: 43%; industry: 20.3%; services: 36.6% (2005 est.) (total labour force: 55.75 million)
Agricultural products	Cotton, wheat, rice, sugarcane, fruits, vegetables, milk, beef, mutton, eggs
Industries	Textiles and apparel, food processing, pharmaceuticals, construction materials, paper products, fertiliser, shrimp
Land boundaries	Total: 6774 km; border countries: Afghanistan 2430 km, China 523 km, India 2912 km, Iran 909 km
Coast line	1046 km
Land use	Arable land: 24.44%; permanent crops: 0.84%; other: 74.72% (2005)
Terrain	Flat Indus plain in east; mountains in north and northwest; Baluchistan plateau in west
Climate	Mostly hot, dry desert; temperate in northwest; arctic in north
Natural resources	Land, extensive natural gas reserves, limited petroleum, poor quality coal, iron ore, copper, salt, limestone

¹⁷ Source CIA 'The World Factbook' (<https://www.cia.gov/library/publications/the-world-factbook/geos/pk.html>) (accessed 10/02/2011).

Environment issues	Water pollution from raw sewage, industrial waste and agricultural runoff; limited natural fresh water resources; no access to potable water for most of the population; deforestation; soil erosion; desertification
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3.1.1 Development challenge

Pakistan is a low-income country and displays many of the low human development features of developing countries in general and South Asia in particular. It has massive financial challenges and high levels of poverty. The human development index ranks the country 141st out of 182 countries¹⁸. The ‘war on terror’ fought in and around Pakistan for the past ten years has further crippled the already weak economic and governance structure in the country and incapacitated its limited development spending. The cost of the ‘war on terror’ is estimated to range between US\$35 and \$40 billion dollars (GOP-PC 2010b). According to the official government report on the Millennium Development Goals 2010, for the past few years, security paradigm has had to replace the development paradigm (GOP-PC 2010b).

In view of the tight budgetary crisis, the development spending of the country has had to be massively cut and all indicators suggest that the Millennium Development Goal targets will not be met by 2015 unless huge resources are mobilised in favour of these millennium development goals (GOP-PC 2010b). By 2009, the development spending was at a meagre 3% of GDP from an earlier 4.4% in 2008, with marginal investments of approximately 2.1% of GDP in education and 0.5% in health (GOP-Finance 2009). Pakistan’s total public debt stood at an estimated Rupees. 8160 billion as of the end of March 2010: at this level, public debt is equivalent to 56% of GDP, and 379% of total budgeted revenue for the year (GOP-Finance 2010)¹⁹. So not only has the development budget been shrunk, but massive public debt and the war on terror have resulted in a very constrained fiscal space for the government to deal with a challenge like climate change.

In addition to its economic and security problems, the country faces enormous social challenges including growing poverty, terrorism, an expanding population, unemployment, low literacy, poor health systems and unstable governance. Such difficult social and economic conditions generate

¹⁸ http://hdrstats.undp.org/en/countries/country_fact_sheets/cty_fs_PAK.html

¹⁹ http://www.finance.gov.pk/survey/chapter_10/State_of_the_Economy.pdf (accessed 16/2/2011); pp viii.

great challenge for policymakers in their efforts to develop an integrated approach to sustainable development. The next section describes some of the key climate change issues in Pakistan.

3.1.2 Climate challenge

Pakistan is not a major emitter of GHG; either in total or per capita terms (GOP-MOE 2003; Ministry of Environment 2003; GOP-PC 2010a; Planning Commission 2010). Pakistan's GHG emissions (309.4 MTCO₂e) are 0.8% of total global GHG emissions and position the country in 135th place in the world on the basis of its per capita emissions (GOP-PC 2010a). The breakdown of GHG emissions is shown in Table 9 (Khan et al. 2011), with the energy sector as the largest source of GHG emissions followed by agriculture, industrial processes, land use change and forestry (LULUCF), and wastes.

Table 9 Emissions breakdown²⁰

Sector	Emissions in 1994 (MTCO ₂ e)	Emissions in 2008 (MTCO ₂ e)
Energy	85816	156821
Agriculture	71632	120284
Industrial processes	13297	17866
LULUCF	6527	8920
Wastes	4454	5505

Taking a closer look at the energy sector, and researching the requirements to meet the energy shortfall needs, estimated to lie in the range of 2500–5000 MW, costing the country US \$6 billion in 2008, the recent UNFCCC sponsored study by Khan et al. (2011) concluded that significant financial inputs are required to de-link economic growth from a corresponding growth in emissions. These additional investment costs for mitigation range from US\$8 billion to US\$17

²⁰ PAEC-ASAD (2009): Athar G. R., Ahmad, A. & Mumtaz, A. 'Greenhouse Gas Emission Inventory of Pakistan for the Year 2007–08' (unpublished as yet; this data is used in the Official Government of Pakistan Task Force on Climate Change 2010 report).

billion (up to 2050) and require an upward investment of US\$10 billion through renewable energy sources.

Pakistan is extremely vulnerable to climate change, in accordance with its location and demographics (GOP-MOE 2003). Agriculture occupies a significant share of GDP and employment and a central role in the economy. It is the second largest sector, accounting for over 21% of GDP and representing 45% of the country's labour force (GOP-Finance 2010). Climate change thus becomes very relevant to Pakistani policymakers, given the wide contribution of agriculture to the economy and the vulnerability of agriculture to climate change impacts.

Pakistan's key climate change threats have been defined in a recent study undertaken by the government's Task Force on Climate Change (GOP-PC 2010a), and include:

- increased variability of monsoon rains
- rapid recession of Hindu Kush-Karakoram-Himalayan glaciers threatening water inflows into the Indus river system; reduction in capacity of natural reservoirs due to glacier melt and rise in snow line
- increased risks of flood and drought
- increased siltation of major dams resulting in greater loss of reservoir capacity
- severe water stress and heat stress conditions in arid and semi-arid regions, leading to reduced agriculture productivity and power generation
- increased upstream intrusion of saline water in the Indus Delta, adversely affecting coastal agriculture, mangroves and breeding grounds of fish
- threat to coastal areas including the city of Karachi due to sea level rise and increased cyclonic activity due to higher surface temperatures
- increased health risks (heat strokes, pneumonia, malaria and other vector-borne diseases)
- risks to other vulnerable ecosystems (e.g. rangelands, degraded lands and mountainous areas)
- increase in deforestation and loss of biodiversity.

In view of the above impacts, water security, energy security and food security become important policy concerns in the country. Pakistan is disproportionately exposed to the impacts of climate change and suffers an increased risk of flood and drought. The UN has characterised the floods in 2010 in Pakistan as the worst humanitarian disaster in recent history²¹ and a recent multilateral study has costed the economic impact within the range of US\$48.74–10.85 billion (Asian Development Bank et al. 2010). Pakistan's extreme vulnerability to climate change has been highlighted in various policy and research reports including Pakistan's initial national communication to climate change (2003), the Country Case Study on Climate Change Impacts and Adaptation Assessment (1998), and the task force report in 2010 from the Planning Commission (GOP-PC 2010a). These reports highlight adaptation as an essential strategy to deal with the climate challenge in Pakistan.

The next section describes how the key structures and process of the government relevant to climate change are arranged.

3.2 Integration in practice: structures and process

Pakistan's organisational structure for addressing climate change (Figure 1) has been outlined in the task force report (GOP-PC 2010a). This is a schematic diagram and not hierarchical. It represents the links among various governmental ministries and relevant stakeholders in the government, academia, civil society and funding agencies. Three lead ministries have been identified for climate change matters: the Ministry of Environment (MOE), the Planning Commission (PC) and the Ministry of Foreign Affairs (MOFA). Key institutions concerned with mitigation and adaptation, academic and research organisations, funding agencies and some of the major NGOs undertaking climate change work have been listed. This list is not comprehensive. Figure 1 is a link of potential more than substantial links and arrangements.

²¹ <http://www.undispatch.com/pakistan-floods-are-worst-humanitarian-disaster-recent-history>

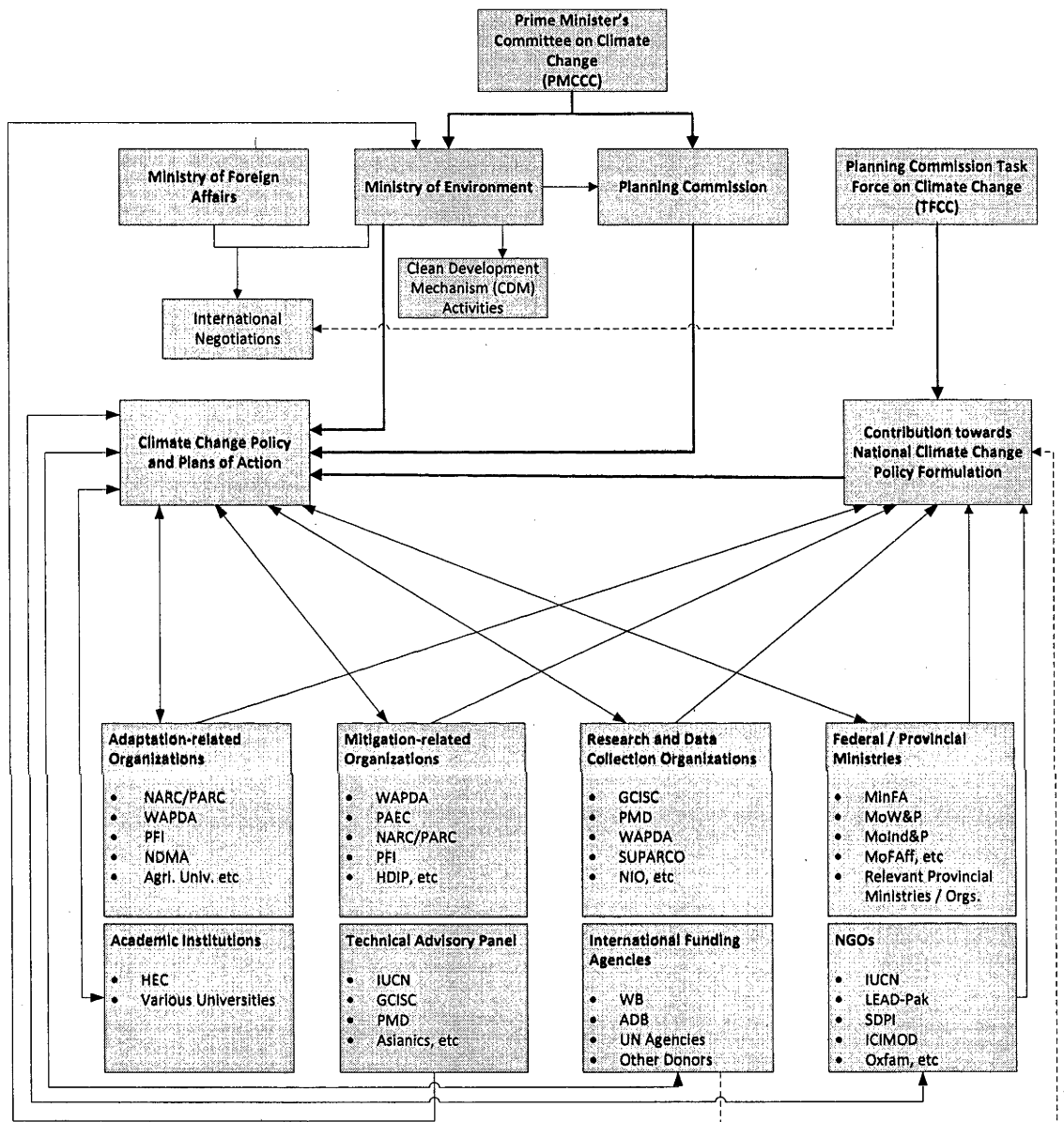


Figure 1 Pakistan's organisational structure for addressing climate change

The Prime Minister's Committee on Climate Change had taken a high-level role in development of climate change strategy and policy, under finalisation in the MOE, at the time of writing. Initially, a cabinet committee on climate change was formed in 1995 for a policy coordination role. This

committee was later changed to the Prime Minister's Committee on Climate Change in 2004 with the same high-level policy coordination role. The Pakistan Environmental Protection Council (PEPC) is the highest environmental policymaking body in the country, chaired by the Prime Minister or his nominee. The PEPC comprises professionals, civil servants and private sector executives, members of academia and civil society and high-level political representatives drawn from the four provinces. The PEPC is a constitutionally mandated structure and, at present, has no formal linkages with the Prime Minister's Committee on Climate Change. The PEPC was very active in the formulation of the *Pakistan Environmental Protection Act (1997)*, but has not been actively associated with climate change. The task force report diagram represented in Figure 1 did not include PEPC but this is an important high-level policy form of the government and needs to be integrated with institutional structures, such as the Prime Minister's Committee on Climate Change.

At the federal level, the subject of climate change is coordinated at the policy, implementation and regulatory levels by the Ministry of Environment (MOE). The MOE is the federal focal ministry for policy planning, formulation and coordination on environmental issues and becomes the lead ministry on climate change matters; it is also the focal ministry for the UNFCCC and its ensuing operational financial mechanism (IUCN-Pakistan 2007; Oxfam 2009; LEAD 2010).

The MOE started functioning as the Environment and Urban Affairs Division (EUAD) in 1974 within the Ministry of Housing and Works. As international environmental issues were gaining global policy attention following the UN conference on Human Environment in Stockholm in 1972, institutional responses to the environment were commencing (GOP-MOE 1992). The MOE has had frequent institutional mergers and demergers within the interministerial structure, commencing in the early 1990s, when environmental issues began to gather wider policy attention in Pakistan, following the UNCED in 1992.

Forestry as a subject was taken from the Ministry of Food and Agriculture and merged with EUAD to become the Ministry of Environment, Urban Affairs and Forestry in 1995; later in another restructuring the Ministry of Environment was merged with the Ministry of Local Government and Rural Development and named the Ministry of Environment, Local Government and Rural Development. The institutional structure of the ministry at the time of writing did not include local

government and rural development and the ministry is now known as the Ministry of Environment (MOE).

As a result of the constitutional amendments, the environment has now been devolved to the provinces and the subjects relating to climate change have been transferred to the Planning Commission with effect from July 1, 2011. In view of these changes, the MOE as a separate ministry has ceased to exist. Under the post-18th amendment milieu, the planning system will exercise control over the development process through (GOP-PC 2011):

- consultation, setting medium-term and annual development objectives for the government and for relevant ministries
- identification of key economic reforms required for these objectives, development of quantitative indicators (which can be monitored) for these reforms and monitoring and reporting on them to government and the people
- specifying government and ministry level reporting requirements for development results and their costs, to ensure accountability and track progress
- strengthening the capacity of ministries and, by interaction and evaluation, ensuring that their strategies and services support national development priorities
- developing capacity of the planning system to act as an institution that develops and oversees the government's reforms agenda.

The Planning Commission has a lead role in preparation of long-term plans and programs and approves major environmental and developmental projects and programs of the country, while the MOFA assists the MOE in international climate negotiations. Pakistan operates on a five-year planning framework: the first five-year plan was for the period 1955–60 and the latest plan was the medium-term development framework for the period 2005–10²². The Planning Commission of Pakistan set up the Task Force on Climate Change in October 2008 under the chairmanship of the Deputy Chairman of the Commission with the rank of a minister to contribute to the formulation of a climate change policy that would assist the government in pursuing the paramount goal of

²² Source: Planning Commission records.

sustained economic growth by appropriately addressing the challenges posed by climate change (GOP-PC 2010a).

The next section describes the constitutional framework and the recent constitutional changes.

3.2.1 Constitutional framework

Pakistan has a federal structure and consists of five provinces, one federal capital territory and federal and provincial tribal areas. It is governed according to a constitutional framework agreed in 1973, which has been subjected to nineteen amendments so far. Originally in the constitution there were three lists – federal, provincial and concurrent – and the environment was part of the concurrent list (as entry number 24: environmental pollution and ecology). In 2010, the 18th constitutional amendment abolished the concurrent list, by virtue of which the subject of environment is no longer the responsibility of the centre (Alam 2010; Waseem 2010). The environment is now in the provincial domain and the transition is to be completed by 30 June 2011.

As ‘environmental pollution and ecology’ was included in the concurrent list, federal and provincial governments shared responsibility on the environment. Now, with the passage of the 18th constitutional amendment, this may change and is the subject of current policy discussions. The 18th amendment will affect how the subject of the environment, and therefore climate change, is treated institutionally in the country. International treaties and international obligations are still part of federal lists, so the federal government would continue to negotiate international agreements in this regard. Issues such as climate change that are addressed in global negotiations will be the responsibility of the federal government. The federal government is now implementing the new institutional arrangements, as a result of this constitutional change.

Federalism in Pakistan has a long and detailed history that is beyond the scope of this research. However, the issue has underpinnings on the larger issue of federal–provincial relations and affects how public policy is designed and implemented on climate, environment and sustainable development. A leading political scientist in Pakistan (Waseem 2010, p. 23) sums up his argument on federalism:

*Our observations point to the historical, legal, institutional and moral sources of legitimacy for the structural and operational dynamics of federalism in Pakistan, as opposed to the inherently centralising tendency immersed in the nation-building agenda. Federalism in Pakistan has a history of a forward movement under civilian rule (1973–77, 1988–99 and 2008–) and a retrogressive march under a military-led government (1958–71, 1977–88 and 1999–2008). The former tends to be populist and consensus-based. The latter looks at federalism as a recipe for dilution of state authority. However, **federal governments under both civilian and military set-ups showed a tendency to control the purse and policy at the cost of provinces**. Federalism as a symbol of shared sovereignty remains somewhat elusive, even as Pakistan has gradually moved towards relative liberalisation of the principles of coordination and cooperation among and between provinces and the center.*

The present research reviewed the structures and processes with respect to the current systems in place. However, many of the institutional structures and mechanism may need to be adjusted once the operationalisation of the 18th constitutional amendment is completed. The issue of delegation of powers and responsibilities on environment will require major capacity building needs in the provinces, as capacity on the environment and sustainable development has largely been built at the national level rather than in the provinces. However, given the weakness of the provinces and the force of centralisation identified above, and the ongoing role of the federal government in climate change internationally, it is certain that national scale capacities – the focus here – will remain crucial.

3.2.2 Legal framework

At the national or domestic level, the relevant suite of environmental policy planning dates go back only to 1992 (Banuri & Khan 2001), when serious efforts were made on environmental legislation. The environmental legal framework is founded on the *Pakistan Environmental Protection Act 1997*. The act limits emissions and effluents through the National Environmental Quality Standards and sets the institutional framework for environmental management in Pakistan

(Alrai 2005). The act does not specifically address climate change. As a result of the constitutional changes, the following key developments have taken place in relation to climate change²³:

- climate change has been entrusted to the Planning Commission
- the MOE is now devolved, as a result of which three sections (environment, forestry and international cooperation) have been placed under the Planning Commission. The following functions have been retained at the federal level including:
 - national policy, plans, strategies and programs regarding environmental pollution, ecology, forestry, wildlife, biodiversity, climate change and desertification assigned to the Planning Commission
 - coordination, monitoring and implementation of environmental agreements with other countries, international agencies and forums assigned to the Planning Commission
 - secretariat of Pakistan's Environmental Protection Council established under the *Pakistan Environmental Protection Act 1997* (XXXIV of 1997) – assigned to the interprovincial coordination division.

National climate change policy, after extensive consultations with all the provincial stakeholders, was accorded approval by the MOE and is ready for submission to the federal cabinet for final approval. After the devolution of the MOE, this action would be carried out by the Planning Commission. The plans of action are also in the final stage of approval, after undergoing provincial consultations. The climate change policy was not a public document at the time of writing, so cannot be commented on at this stage. Some key environment-related policies are summarised in Table 10.

²³ Email communication with MOE.

Table 10 Key national policies, plans and strategies relating to the environment²⁴

<p>Pakistan Environmental Protection Act (PEPA)</p>	<p>Requires industrial facilities to restrict air emissions and effluents to the limits specified in the National Environmental Quality Standards and establishes the penalties for noncompliance. It also outlines the institutional framework for environmental protection in Pakistan, including creating the Environmental Protection Agency (EPA). The legislation also establishes Provincial Sustainable Development Funds, outlines the duties and authority of the provincial environmental protection agencies and requires environmental impact assessments for public and private projects.</p>
<p>National energy conservation policy (2006)</p>	<p>The policy enumerates broad guidelines to enhance end-use efficiency in various energy consuming sectors of the economy. The policy is likely to create an enabling environment to support energy security plans of the government and for effecting a change in course to sustainable energy and environment patterns in the future. Initiatives include formulating legislation, developing codes and standards, create public awareness, and capacity building.</p>
<p>National environmental policy 2005</p>	<p>This policy covers all sectors and a wide range of means for promoting conservation and environmental protection in water, air and waste management, forestry and transport. The policy aims to promote protection of the environment, the honouring of international obligations, sustainable management of resources, and economic growth. It calls for the setting of standards and regulations for ambient and indoor air quality, vehicle emissions and manufacture, energy conservation, fuel specification and building codes. It aims to promote mass transit and non-motorised transport as well as cleaner</p>

²⁴ Source WRI SD-PAM database (<http://projects.wri.org/sd-pams-database/pakistan>) (accessed 11/2/2011); Hunnam et al. (2007) and Yazdani, M. (2010) Renewable Energy in Pakistan: Policy Strengths, Challenges and the Path Forward. Zurich, Energy Economics and Policy, ETZ Zurich.

	<p>technologies, including natural gas (LPG), solar, hydroelectric, biogas and cogeneration with waste, and offering tax incentives for efficient products. It also calls for creating increased public demand for environmentally friendly products through education and mass awareness campaigns.</p>
<p>National forest policy (2002)</p>	<p>This policy covers the renewable natural resources of Pakistan (i.e. forests, watersheds, rangelands, wildlife and biodiversity). The policy seeks to launch a process for eliminating the fundamental causes of the depletion of renewable natural resources through the active participation of all the concerned agencies and stakeholders, to realise sustainable development of resources.</p>
<p>National conservation strategy (1992)</p>	<p>The main objectives of the strategy are conservation of natural resources, sustainable development and improved efficiency in the use and management of resources. It covers fourteen key priority areas for policy formulation and intervention, including protecting watersheds, supporting forestry and plantations, protecting water bodies and sustaining fisheries, conserving biodiversity, increasing energy efficiency, developing and deploying renewable resources, preventing or decreasing pollution, managing urban wastes and preserving cultural heritage. Energy policies include promoting efficiency and conservation as well as cogeneration, hydro, biogas, solar and new alternatives. The strategy also includes measures to control and limit pollution, for example, changing import duties to favour the most fuel-efficient vehicles, and regulate gasoline, kerosene and diesel pricing to make the least polluting alternatives the most affordable. The incorporation and integration of environmental and sustainable development themes into educational curricula and in the media is also an important feature of the strategy.</p>

Policy for development of renewable energy for power generation (2006)	Pakistan's first energy policy aimed specifically at the promotion of renewable energy power projects. The goal under this policy is for renewable energy technologies (RET) to provide 10% of Pakistan's energy supply mix by 2015. The policy focuses on solar energy, wind energy and small-scale hydropower projects.
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Pakistan has made positive efforts in the direction of environmental policy development. It has generated various structures and processes that could aid CPI; this will be explored further in Chapter 4. The next section presents the background and context relevant to CPI in Malaysia.

3.3 Malaysia

Malaysia is located in South East Asia, with two geographical divisions; Peninsular Malaysia (which consists of eleven states and two federal territories, see Table 11) is separated by the South China Sea from Sabah and Sarawak. Malaysia has a total area of 329,750 km², with Peninsular Malaysia occupying 131,598 km². The two regions have different topographies, with Peninsular Malaysia ranging from coastal to mountainous regions and Sabah and Sarawak predominantly mountainous. Malaysia is one of the least densely populated countries in Asia, and Sabah and Sarawak are particularly sparsely populated (Vincent & Rozali 2005). The population density of Malaysia increased from 55 per km² in 1990 to 82 per km² in 2007 with an urbanisation rate of 63.8% in 2010 (Ministry of Natural Resources and Environment 2011):

Malaysia gained independence from the British government in 1957 and the Federation of Malaysia was formed in 1963, separating from Singapore in 1965. It is a constitutional monarchy with the King as head of state. It has a parliamentary system of government: a prime minister as chair of the cabinet; ministers heading government agencies and staffing provided by professional civil servants.

Table 11 Fact file on Malaysia

Fact file on Malaysia	
Government type and administrative divisions	Constitutional monarchy/federal state system with 13 states (negeri-negeri, singular – negeri): Johor, Kedah, Kelantan, Melaka, Negeri Sembilan, Pahang, Perak, Perlis, Pulau Pinang, Sabah, Sarawak, Selangor, and Terengganu; and 1 federal territory (Wilayah Persekutuan) with 3 components: the city of Kuala Lumpur, Labuan and Putrajaya
Country classification	Middle income
Constitution	31 August 1957; amended many times, the latest in 2007
Legal system	Based on English common law
Key Socio-economic Indicators	
Population	28,274,729 (July 2010 est.)
GDP (in PPP)	US\$416.4 billion (2010 est.)
GDP per capita	US\$14,700 (2010 est.); population below poverty line 5.1% (2002 est.)
Economic Structure	
GDP composition	Agriculture: 9.1%; industry: 41.6%; services: 49.3% (2010 est.)
Labour force by occupation	Total labour force: 11.62 million (2010 est.); agriculture: 13%; industry: 36%; services: 51% (2005 est.)
Agricultural products	Peninsular Malaysia – rubber, palm oil, cocoa and rice; Sabah – subsistence crops, coconuts, rice, rubber and timber; Sarawak – rubber, timber and pepper
Industries	Peninsular Malaysia – rubber and oil palm processing and manufacturing, light manufacturing, pharmaceuticals, medical technology, electronics, tin mining and smelting, logging and timber processing; Sabah – logging, petroleum production; Sarawak – agriculture processing, petroleum production and refining, logging
Coast line	4675 km (Peninsular Malaysia 2068 km, East Malaysia 2607 km)
Land use	Arable land: 5.46%; permanent crops: 17.54%; other: 77% (2005)
Terrain	Coastal plains rising to hills and mountains

²⁵ Source CIA 'The World Factbook' (<https://www.cia.gov/library/publications/the-world-factbook/geos/my.html>) (accessed 24/02/2011).

Climate	Tropical; annual southwest (April to October) and northeast (October to February) monsoons
Natural resources	Tin, petroleum, timber, copper, iron ore, natural gas and bauxite
Environment issues	Air pollution from industrial and vehicular emissions; water pollution from raw sewage; deforestation; smoke and haze from Indonesian forest fires

3.3.1 Development

Malaysia is an emerging economy with a semi-democratic political culture (Crouch 1996) and aspirations to reach developed country status by 2020 (National Economic Advisory Council 2009). Manufacturing dominated the economy of Peninsular Malaysia by the mid-1990s, while those of Sabah and Sarawak remained fundamentally resource-based (Hezri & Nordin Hasan 2006). Malaysia has achieved high levels of human development – with increased economic growth – following the adoption of the new economic policy in 1970 with a greater role of the public sector in the economy (Crouch 1996; Vincent & Ali 1997; Jomo 2007; Jomo & Hui 2010).

Malaysia's development includes three key national policy frameworks: the New Economic Policy (NEP), 1971–90; the National Development Policy (NDP), 1991–2000; and the National Vision Policy (NVP), 2001–10 (Chua & Oh 2010). The NEP was an antidote to the inherited colonial economic system heavily reliant on export of natural resources. The NEP had two objectives: to eradicate poverty among all Malaysians irrespective of race, and to restructure the Malaysian society so that the present identification of race with economic function and geographical location is reduced and eventually eliminated (Mid-Term Review of the Second Malaysia Plan 1971–75, p. 61). The economy expanded rapidly during the NEP period, doubling the per capita GDP, and the growth rate in real per capita GDP was among the highest in the world (Vincent & Rozali 2005). The NDP replaced the NEP with some changes in policy measures, while working with the objectives outlined in the NEP. The purpose of creating NVP was to achieve the objectives of sustainable growth and restructuring of society²⁶.

In its report on new economic model for Malaysia (NEAC 2009: 18), NEAC states that

²⁶ http://www.epu.gov.my/c/document_library/get_file?uuid=426f91a9-f106-4fc0-bbe5-4978bab6a1db&groupId=10124 (accessed 08 April, 2011).

The New Economic Model (NEM) to be achieved through an Economic Transformation Programme (ETP) constitutes a key pillar which will propel Malaysia to being an advanced nation with inclusiveness and sustainability in line with the goals set forth in Vision 2020. The ETP will be driven by eight Strategic Reform Initiatives (SRIs) which will form the basis of the relevant policy measures.

The eight pillars include: re-energizing the private sector; developing quality workforce and reducing dependency on foreign labour; creating a competitive domestic economy; strengthening of the public sector; transparent and market friendly affirmative action; building the knowledge base infrastructure; enhancing the sources of growth and ensuring the sustainability of growth.

3.3.2 Climate

According to Malaysia's second national communication, emissions in Malaysia were 9.5 t CO₂e per capita. Compared with Pakistan, Malaysia has much higher per capita emissions. The highest proportion of anthropogenic GHG emissions was in the form of CO₂ emissions, which represented 75.1% of emissions in 2000. Table 12 displays the sectoral breakdown of Malaysia's inventory of GHG emissions outlined in Malaysia's second national communication.

Table 12 Greenhouse gas inventory

Sector	Emissions in 2000 (MTCO ₂ e)	Sink (MTCO ₂ e)
Energy	147	
Industrial processes	14.13	
Agriculture	5.91	
LULUCF	29.59	-249.78
Waste	26.36	
Total	222.99	-249.78
Net total (subtracting sink)	-26.79	

The energy sector represents a major source of GHG emissions in Malaysia and is a key driver in the economy, while the land use change and forestry sector represents a major sink, reducing the total emissions to negative. In terms of the climate change impacts outlined in the second national communication, a temperature change of 0.6–1.2°C per 50 years (1969–2009) and sea level rise of 1.3 mm per year (1986–2006) has been observed in Malaysia. Given the range of impacts associated with the change in climate, the second national communication (NC2) recommended, *inter alia*, that (Ministry of Natural Resources and Environment 2011, p. 65) the government should strengthen efforts to address climate change issues and encourage adaptation measures with an integrated climate change adaptation program included in each of the five-year development plans. These recommendations, in particular, highlight the need for an integrated approach to climate change in Malaysia.

3.4 Integration in practice: structures and processes

This section describes some key institutional mechanisms – structures and processes – relevant to climate change matters in Malaysia.

3.4.1 Legal framework

The first environmental legal framework in Malaysia is the *Environmental Quality Act 1974*. This act deals with the prevention, abatement and control of pollution, and enhancement of the environment²⁷. The evolution of Malaysia's post-1970 national environmental policy and emerging institutional and governance mechanisms can be characterised in four distinct stages: (1) the federalisation of environmental policy; (2) crisis and consolidation; (3) emergence of sustainable development; and (4) policy integration for sustainable development, distinguished by changes in policy content and choice of specific instruments (Hezri & Nordin Hasan 2006; Hezri & Dovers 2011). Table 13²⁸ provides a summary description of the stages.

²⁷ <http://www.elaw.org/system/files/MalaysiaEQA1974.pdf> (accessed 08 April 2011).

²⁸ Hezri & Hassan (2006) and Hezri & Dovers (2011) and interviews in Malaysia.

Table 13 Stages of environmental evolution in Malaysia

<p>Stage 1: Federal policy formulation or federalisation of environmental policy (1971–76)</p>	<p>The first federal legal framework for pollution control was agreed in this period – the <i>Environmental Quality Act 1974</i> – and to implement the act, the division of the environment was created in 1975 under the Ministry of Local Government and Housing and moved to the Ministry of Science, Technology and Environment in 1976. This institutional development was also in tandem with the implementation needs following the United Nations Conference on Human Environment held in Stockholm in 1972.</p>
<p>Stage 2: Crisis and consolidation (1977–88)</p>	<p>Malaysia announced the new economic policy (NEP) in 1970 created to achieve poverty eradication and restructuring of society to reduce inter-ethnic disparities and raise the <i>bumiputera</i> share in occupations and corporate wealth ownership²⁹. This period saw the development of export-led industrialisation and greater state intervention in national economic planning. Given the massive impetus given to economic development, there was a significant environmental transformation in the 1970s and 1980s and various environmental policy instruments including the National Forest Policy (1977) and the Environment Impact Assessment (EIA) Order 1987 were agreed upon in this period.</p>
<p>Stage 3: The emergence of sustainable development (1989–2000)</p>	<p>This period coincided with the global development of the sustainable development concept, emerging at the launch of <i>Our Common Future</i> by the World Commission on Environment and Development³⁰. Malaysia gained international recognition by promoting the development concerns of the South and was the founding chair of United Nations Commission on Sustainable Development. At the national level, it began to address issues of sustainable</p>

²⁹ (Jomo 2007)

³⁰ (WCED 1987)

	development and the first statement of intent on sustainability was agreed in the sixth Malaysia Plan (1991–95).
Stage 4: Implementing sustainable development or policy integration for sustainable development (2001–present)	This period saw the development of major environmental policies including the National Biodiversity Policy 1998, the National Policy on the Environment 2002, the National Climate Change Policy 2009 and the National Green Technology Policy 2009.

For the purpose of this research, the third stage – from 2001 onwards – has seen crucial major developments relating to climate change occur in Malaysia. Three major policies: the National Policy on Environment (2002), the National Climate Change Policy (2009) and the Green Technology Policy (2009) were formulated in this period. In terms of institutional measures on climate change, a national climate committee was formed in 1995 chaired by the Secretary-General of the Ministry of Science, Technology and Environment (now the Ministry of Natural Resources and Environment). This committee included members from government, business and civil society. A national committee on clean development mechanisms was set up in 2002 to deal with CDM issues, following Malaysia's ratification of the Kyoto Protocol in 2002. The major policies relating to energy development in the country are: the National Petroleum Policy (1975), the National Energy Policy (1979), the National Depletion Policy (1980), the Four Fuel Diversification Policy (1981), the Five Fuel Policy (2001) and Biofuel Policy (2006).

Following the adoption of the Bali Action Plan in 2007, the political response in countries like Malaysia intensified. A cabinet committee on climate change was formed in 2008 to deal with the urgent concerns of climate change. In 2010, the committee was merged to form the National Green Technology and Climate Change Council chaired by the Prime Minister to ensure greater coordination and synergy in climate change and green technology efforts. In terms of institutional structures and processes related to environmental policy, Malaysia has an environment ministry, national environmental agency, national environmental report, legal framework for the environment and a council of environmental experts (Weidner 2002; Sonnenfeld & Mol 2006).

In terms of policy development, the NRE has recently completed a climate change policy approved by the cabinet in 2009 (Ministry of Natural Resources and Environment 2009). The objectives of the climate policy are:

- mainstreaming climate change through wise management of natural resources and enhanced environmental conservation resulting in strengthened economic competitiveness and improved quality of life
- integrating responses into national policies, plans and programs to strengthen the resilience of development from arising and potential impacts of climate change
- strengthening institutional and implementation capacity to better harness opportunities to reduce negative impacts of climate change.

As part of Malaysia's obligation under the UNFCCC, the first national communication (NC1) was submitted in 2000 to the UNFCCC, while the NC2 was submitted in April 2011³¹. Thus, the second national communication was not available during the majority of this research exercise, at the time of the interviews or for most of the writing period.

The next section describes key ministries relevant to CPI in Malaysia.

Economic Planning Unit

The Economic Planning Unit (EPU) started as the Economic Secretariat to the Economic Committee of Federal Executive Council in 1956, with the secretariat later restructured as the EPU under the Prime Minister's Department in 1961³². The EPU, which reports to the Prime Minister, is the chief economic planner of the government and a secretariat for national economic policies (Ahmad et al. 2003). It advises the government on national development policy and economic issues and its fundamental task is the preparation of five-year national plans, which influence all sectors, and mid-term reviews of these plans. Given its unique and central role in economic planning, it is accorded high respect and power within the Malaysian public administrative system. Malaysia is now in the tenth Malaysia Plan period, which commenced in 2011 and ends in 2015.

Ministry of Natural Resources and Environment

The Ministry of Natural Resources and Environment (NRE) was established in 2004, and with that establishment the Department for Environment, which was upgraded from a division to a department in 1984, came under its jurisdiction (Mokhtar & Ta 2010). This was done with the objective to provide 'one window' on environment for the government and the public. Given the NRE's mandate on the environment, it works with other institutions, such as the EPU, on climate change issues. It is also the focal ministry to the UNFCCC on climate change matters. Malaysia ratified the UNFCCC in 1994 and the Kyoto Protocol in 2002 (Ministry of Natural Resources and Environment 2005).

³¹ Source: email communication with the NC2 project team and http://unfccc.int/national_reports/non-annex_i_natcom/submitted_natcom/items/653.php (accessed 1/11/2011).

³² <http://www.epu.gov.my/dasar> (accessed 8/5/2011).

Ministry of Energy, Green Technology and Water

The Ministry of Energy, Green Technology and Water was set up in 2009 and replaced the Ministry of Energy, Water and Communications. The role of this ministry is to supervise and administer functions relating to energy, water and green technology. Its role has become very important given the passage of the new Green Technology Policy approved in 2009 (Table 13). The National Green Technology Policy adopted in 2009 (Ministry of Energy 2009) embodies five objectives: reduce energy usage and increasing economic growth; expand the green technology industry; increase national capability and capacity for innovation in green technology development; ensure sustainable development; and enhance public awareness and education on green technology. This policy is built on four pillars:

- energy – seek to attain energy independence and promote efficient utilisation
- environment – conserve and minimize the impact on the environment
- economy – enhance national economic development through use of technology
- social – improve the quality of life for all.

Petronas

Petronas was incorporated in 1974 as the national oil company, fully owned by the Malaysian government, and controlled the petroleum resources of the country (Chua & Oh 2010). Given its unique role in petroleum products, Petronas is politically a very powerful agency in Malaysia and an important stakeholder in development of policies relating to the energy sector. Oil and gas have been a major source of government revenue in the 1970s and 1980s and have played an essential role in financing the increased government expenditure during the NEP period (Vincent & Rozali 2005).

3.5 Conclusion

This chapter has exposed the economic, institutional, environmental and developmental similarities and differences between Pakistan and Malaysia. While Pakistan and Malaysia are part of the developing countries group, they do provide interesting similarities and differences for exploring CPI at national scales (see Chapters 4 and 5). Pakistan is a predominantly agricultural economy focussed on moving from agriculture to manufacturing, with poverty

alleviation a key policy goal in which issues of energy access and adaptation become noteworthy. Mitigation is not a priority. Malaysia aims to become a high-income economy, moving from manufacturing to services, and thus has a focus on industrial transformation and growth. Mitigation is a relevant issue. These needs require a marriage of different set of institutions and systems to generate and sustain a low carbon and climate-resilient development.

Pakistan and Malaysia have a network of structures and processes including *inter alia*: key government ministries focussed on environment and climate change; environmental and climate policy developments; high level committees on environment and climate change and emerging policy and research work on climate change. This chapter has exposed some of the salient underpinnings of such structures and processes that can be further explored for CPI.

This chapter has provided the background and relevant institutional context for the two case studies – Pakistan and Malaysia – to lay the foundation for the empirical work in Chapters 4 and 5, where CPI at a national scale is explored in further detail. A comparative analysis of the findings from Malaysia and Pakistan is then presented in Chapter 6.

Chapter 4: Pakistan

Adaptation to climate change is already a big theme in the work done by the Intergovernmental Panel on Climate Change and others. But there's something missing from the population side of the equation, Montgomery says. "The global conversation about climate change has been fixated on emissions: their levels, who's responsible, what can be done to bring them down, and who'll pay," he says. There has been much less discussion about precisely who will be affected by the consequences (Smith, 2011: 331)

This chapter explores the existing or emerging CPI mechanisms (structures and processes) at the national scale in Pakistan. The findings are derived from empirical work in Pakistan, comprising in-depth, semi-structured interviews with key informants; analysis of government documents and published reports, and the author's personal experience as a member of Pakistan's bureaucracy. There is very limited academic research on environmental issues in Pakistan in general and especially on climate change. In particular, there is hardly any description or analysis of the national policy system, structures and processes or analysis of the efficacy of an integrated climate and development approach at the national policy level. This research attempts to fill this deficit. The limitations and challenges of the research were outlined in the introduction and methodology chapter, and this chapter will focus on the findings from the interviews, literature and documents.

4.1 Emerging themes

The themes distilled from the interview data and categorised under different headings were (Chapter 1):

- **Role of the MOE:** until June 30, 2011, the MOE functioned as the central lead agency on the environment and climate change in Pakistan. This theme identifies its role and capacity to further address climate change in the country. Following conclusion of this research, it has been re-named as the Ministry of Climate Change.
- **Information and research:** information and research provide the essential backbone of any climate change action or policy. There was a clear deficiency in both the quality of

institutions with enough scientific capacity and the lack of substantive studies on climate change.

- **Institutional silos:** awareness of climate change has increased among policymakers and institutions in Pakistan, but the response has been weak, *ad hoc* and silo-based.
- **Laws, plans and policies:** Pakistan has been a pioneer among developing countries in terms of developing its own environmental policies. However, these have not resulted in institutionalised action on the environment in general or climate change in particular.
- **Finance:** the financial capacity of the government to promote a low carbon and climate-resilient development is limited in the wake of its economic status and effects of the war on terror.
- **Civil society capacity, engagement:** civil society has been actively engaged in environment and climate change matters and their presence has made a difference in the outputs of the government.
- **Global multilateral process:** global multilateral process has been both a promoter and an impediment in climate change action in Pakistan.

Many themes do have overlapping distribution, as the issues are similar. The themes are discussed in detail in the sections below. For more details on methodology, see Chapter 1.

4.1.1 Role of the MOE

The bulk of the interviews raised the role and capacity of the MOE as a key issue. Capacity on the environment was limited in the civil service-oriented bureaucratic set-up and the MOE has had to assign different roles to existing officers to deal with new subjects, such as local government and forestry. The MOE had to reorganize to allow its technical team on urban affairs to work on environmental matters³³. In the author's view, this was done through basic administrative reorganisation rather than any thoughtful or design-oriented process. For example, a senior level official, the Director General of Urban Affairs, was made Director General of Environment and is now the focal point on climate change, although his original training and education, and that of his unit, was in urban planning. Continuity in policy

³³ MOE records and author's observations.

processes, and building of human capacity, especially on complex cross-sectoral issues, is not helped by repeated re-organisation (Ross & Dovers 2008).

In addition to frequent institutional and staff changes (Chapter 3), many respondents mentioned that the MOE had never been a desired posting for most senior officials or the minister, which reduces individual and institutional capacity on environment and climate change issues. According to one interviewee (DP2), "MOE is a dumping ground for retiring Federal Secretaries". Furthermore, the issue of climate change has been transferred between senior officers within the ministry. This was largely occurring due to internal power politics (FG3); so not only has the issue suffered due to frequent changes of functions of the ministry and senior staff turnover, it has also suffered due to internal shifts in responsibilities on climate change. In some ways, international attention to climate change and the global meetings associated with it enhanced climate change importance as a professional matter to handle (FG2). There is a wider analysis around governance and civil service reform (which this research does not explore further) where deeper reflection is provided on the key impediments to good governance in Pakistan³⁴.

Pakistan was part of the International Monetary Fund (IMF) program and had to undertake many structural reforms in the 1990s to bring the fiscal deficit down. In the author's view, based on observation and discussion over a period of time, these organisational changes, in particular from 1992 onwards, were taking place largely because of federal administrative restructuring or to conform to policy prescriptions agreed with IMF rather than environmental or climate change concerns. In some cases, a reduction of the ministries at the federal level was linked to cost savings, while an increase in ministries was linked to accommodating a large political cabinet. Most of the changes occurred in a period of civilian rule from 1988 to 1999, military rule from 1999 to 2002, civilian rule from 2002 to 2007, and 2007 onwards. In the authors' view, the pace and nature of these administrative changes and the resultant human resource and institutional changes in the MOE affected the embryonic and developing capacity on environment and climate change within the MOE.

³⁴ For more details on wider civil service and reform, see Report of the National Commission for Government Reforms on Reforming the Government in Pakistan", Prime Minister's Secretariat, Government of Pakistan, vol. 1, May 2008; Saeed Shafqat, "Pakistani Bureaucracy: Crisis of Governance and Prospects of Reform", *The Pakistan Development Review*, 38(4), Part II (Winter 1999).

There was a unanimous consensus across the interviewees and in the literature (World Bank 2006; ADB 2008; Oxfam 2009; LEAD 2010) that the MOE and the wider environmental institutional infrastructure were weak in environment and climate change issues in general and their staff lacked technical capacity on climate change. The civil society interviewees, in particular, identified the MOE as having insufficient capacity to address climate change. According to one civil society official (NG1) “ MOE does not have the capacity to implement a complex and cross-cutting issue like climate change, and it neither has the power nor the resources to address the issue” . A recent study (Oxfam 2009) established that key individuals from civil society were responsible for pushing the climate change agenda in Pakistan. The weakness of the ministry was further constrained by issues of power, its role and position in the bureaucracy, and the fact that the MOE is not a revenue generator or financial decision-maker in government budgetary allocation process, limiting its potential to drive policy change across the system.

It was gathered from the interviews that the MOE did not have problems limited to human resource matters, but that projects and program development on climate change was also *ad hoc* and lacked institutional capacity. In particular, the examples from work done by the MOE on the national communication to UNFCCC and the CDM initiative were insightful. Pakistan’s initial national communication to UNFCCC (2003) is a comprehensive compendium of the sources of GHG emissions, possible mitigation options and climate change impacts and adaptation measures. In terms of the MOE’s capacity, on preparing a national communication for the UNFCCC, one of the fundamental obligations of developing country parties, one research consultant (RO2) stated that:

The ministry had no technical capacity at all to do the national communication and they did not deploy staff to try and do it. Neither was any research institution involved. As such, the capacity building was limited to a group of consultants, most of whom went on to do other things. I do not know of the planning processes in the ministry but my guess would be that there was little or no integration of the NC in any decision-making at the ministry.

A more active interest was found in developing and promoting CDM projects, rather than adaptation, which was identified in the interviews as a major concern for the country. Clean development mechanisms gained prominence as a major issue in the ministry from 2004 onwards, when a high-level deputy minister, who is an international expert on CDM, pushed

the issue as a major priority in the ministry and established the CDM unit, and developed a CDM policy and an awareness program on CDM. The CDM was identified as a key interest for the private sector (FG1). According to the Minister (FG1), *“There is a lot of interest by the private sector in CDM and we should promote this as a key activity of MOE”*. The ratification of the Kyoto Protocol was completed in 2004 during the tenure of this minister³⁵. The promotion of CDM as a viable policy option did not emerge due to any strong research or analysis in the MOE, but in the author’s view due solely to the serious interest of a high-level political official. The focus is now beginning to change due to the recent floods in the country and as adaptation begins to capture more policy attention.

Given the pervasive nature of climate change, the challenge for the MOE is to not only ensure synergy and coherence across its various internal units and policies, but across the wider civil service system as well. Furthermore, the latest (18th) constitutional amendment in 2010 transfer of the issue of the environment to the provinces questions the survival of the ministry in its present form, or at all. If the MOE survives, as many respondents felt it would, the constitutional changes will have an impact on how the MOE is structured to deal with climate change issues. One government official (FG6) remarked:

Still the future of environment as a subject at federal level is being discussed in professional circles. The Minister and Secretary are confident so far that it will survive in some shape due to various factors like international linkages, climate change and multi-dimensional aspects of the subject of environment compared to 1973. I also feel that it will not cease at federal level ... So far, it is not named among the fifteen ministries to be shifted to the provinces by February 2011. Climate change may be one major aspect for its survival. If the ministry ceases to exist independently, then the functions of policy, international linkages, etc. could be performed through Wings in Planning Commission, Foreign Affairs Ministry, etc. Provinces are keen to take these roles but require funds and adequate capacity to handle these. There must be a mechanism in place for gradual shifting of responsibilities as well as enhancing their capacity.

As pointed out in Chapter 3, the environment is now devolved to the provinces and the MOE as a separate ministry has ceased to exist, with functions relevant to climate change transferred to the Planning Commission. The transfer to the Planning Commission can be

³⁵ MOE records.

considered a positive step for climate mainstreaming, given the involvement of the commission in development policies. However, it is too soon to judge the implications in the wake of this decision.

Furthermore, this devolution of environment to the provinces will have implications for the provinces, given their low capacity and weak involvement in climate change matters. Hitherto, climate change has been addressed as a top-down issue in Pakistan and the legal rules and structures have been created largely at the federal level. With most of the institutional structure and capacity built in the federal structure, a lot of work and effort will be required as the environment is transferred to the province and district level. This will have impact on the relationship between the federal and provincial governments and will require, among other things, a significant increase in the capacity at federal and provincial levels. As mentioned previously, at the conclusion of this research, MOE has been re-named as the Ministry of Climate change, but to what extent this will impact CPI is not clear at this stage. Having the nomenclature of Ministry of Climate Change does not change its status and power automatically, unless corresponding institutional systems and structures and processes within these have been accordingly adjusted to reflect its new role in climate change.

4.1.2 Information and research

Climate change mitigation and adaptation requires detailed and current information. The lack of information and research capacity on climate change emerged as a key issue from the interviews and the literature (IUCN-Pakistan 2007; Oxfam 2009; LEAD 2010). According to a former diplomat who also worked with an environment aid agency (DP-2), *“Pakistan has not been able to develop a hard-core team of scientists on climate change”*. Two related problems emerged from the empirical findings on information and research – a lack of research institutions with sufficient capacity on climate change, and a lack of substantive studies on climate change. Many of the interviewees reiterated that there was an ‘information deficiency’ on climate change in the country. Apart from a few donor-funded studies on climate change, there is no consistent government effort to engage or support such research. According to one government official (FG2), *“climate change is still a donor driven issue in Pakistan”*

In terms of government efforts on policy and research work on climate change, the national communication is again an interesting example. The work on national communication was

outsourced by the MOE to consultants and prepared externally. According to a researcher (RO2) who commented on the process of preparing the national communication:

It began with the Asian Development Bank (ADB) launching a regional project called ALGAS [Asia least cost abatement strategy], which aimed to build capacity in some Asian countries on how to develop an inventory and how to assess mitigation measures. ALGAS did not address adaptation issues. The Ministry of Environment advertised for consultants to work on the ALGAS report, and Hagler Bailly won the bid as the lead in a consortium. Once ALGAS was complete, the ADB gave further assistance to the environment ministries in the region to develop a full-fledged national communication. This work was again out-sourced to consultants by the ministry and once again Hagler Bailly Pakistan (HBP) won the bid.

Outsourcing to consultants is not a problem unique to Pakistan as it is confronted in many other developing countries as well. For example, Malaysia has just completed its second national communication to UNFCCC and has used a variety of consultants to undertake this exercise. Given that national communication is thereby treated as a project-based activity, institutionalising it in the structures and process of the government becomes difficult. The national communication builds capacity to undertake climate change policy in the country. According to one researcher (RO2), the capacity acquired through preparing initial national communication has never been institutionalised in any office:

... other than the capacity built in the small team working on the NC, not much. The capacity was not institutionalised in any government office.

The MOE has initiated work on the second national communication but is still unclear whether some of the lessons from the initial national communication, particularly on the sustainability of the process, will be applied. How the MOE institutionalises technical support from external consultants, given the experience of the initial national communication, cannot be commented upon at this early stage. Some of the other major climate change studies relating to both mitigation and adaptation undertaken by the government are given in Table 14.

Table 14 Key climate change work

<p>Asia least cost abatement strategy (ALGAS)</p>	<p>The ALGAS project (1998), funded largely by the Asian Development Bank (ADB), was an important technical assistance project covering 12 Asian nations including Pakistan. The report provided a comprehensive overview of GHG emission scenarios as well as a compendium of mitigation options.</p>
<p>Climate change in Asia – regional study on global environmental issues (1992–94)</p>	<p>This report, supported by funding from the Asian Development Bank (ADB) and finalised in 1994, provided a comprehensive analysis of Pakistan’s vulnerability to climatic events. The study recommended the technical and economic feasibility of options that could be undertaken to adapt to climate change and also limit GHG emissions or enhance their sinks.</p>
<p>Country case study on climate change impacts and adaptation assessment</p>	<p>Completed in 1988, this study assessed the impacts of climate change on four major sectors of the economy – agriculture, forestry, water resources and meteorology.</p>

Table 14 is not an exhaustive list and most of the studies are dated. Some recent studies cited in this research have been undertaken by civil society; however, the overall conclusion from the empirical work is that there is very little recent substantive information on climate change in the country. Some positive developments include the emergence of a research centre established under the MOE and the newly created ‘One UN Program on Environment’ under the United Nations Development Program, which is helping to fund climate change work (IUCN-Pakistan 2007; LEAD 2010).

In addition, there is no climate policy research think tank or similar coordinated capacity supported by the government to provide policy relevant research. Civil society organisations, such as Leadership for Environment and Development, Pakistan (LEAD-Pakistan), Sustainable Development Policy Institute (SDPI), IUCN and Oxfam are undertaking some climate policy research; however, such efforts are only just emerging.

According to IUCN-Pakistan (2007, p. 41):

Climate change research in Pakistan is in its initial phase ... Some gaps which need to be addressed with reference to climate change research are as follows:

- Research is currently being conducted in pockets by various institutions. Improved coordination and mechanisms for sharing and making research accessible are required so that maximum benefit may be gained in the limited resources available.
- Although water and agriculture are priority sectors, research should simultaneously be expanded into other sectors such as forestry, biodiversity, coastal zones etc.
- Potential effects on socio-economic sectors including those of health, poverty and livelihoods, migration etc. need to be investigated in greater detail.
- Vulnerability assessments of communities should be conducted, on the basis of which adaptation mechanisms may be devised.
- Academic institutions should be supported for participating in research activities, and their coordination with research institutions should be strengthened.

On the research side, a new Global Change Impact Study Center (GSICS) was created in 2002 to undertake research in climatology, agriculture, water resources, the environment and trans-boundary pollution. The GSICS has recently been moved to the MOE; however, its institutional efficacy on climate research outputs cannot be assessed at this stage. One civil society respondent (NG1) remarked:

Government is taking steps on climate change, but seem ad hoc and insufficient – a research centre like GSICS established – but these are baby steps.

Given Pakistan's vulnerability to climate change, emphasised by the floods in 2010, there is a greater need for building the research and information capacity to deal with climate change. Mitigation and adaptation demand different information and research needs and it was clear from this empirical work that such capacity was absent, reducing the possibility of CPI. Reporting, both national and international (i.e. national communications), was based on limited and often secondary data sets and primary data were missing or weak (FG2).

There is also the issue of the political culture of research and information generation that emerged from the interviews. According to an environment aid agency official (DP2), there is also a declining intellectual content of the bureaucracy, which is undermining research

development. While there is some research capacity, the politics of bureaucracy and the overall respect and employment conditions of researchers are not conducive to a strong research and information dissemination culture and the universities and academic research centres are under utilised (this is also the author's observation). According to another official (DPI), peer-review culture is lacking on research and policy development in Pakistan. This research does not explore any further how the political and bureaucratic culture in Pakistan is affecting the development of research in general and climate change in particular. However, clear identification of a lack of research capacity on climate change in the country emerges strongly from the empirical findings. A government official (FG5) who previously worked with a research think tank expressed the view that there is limited acceptance for research in Pakistan and policy action is generally devoid of detailed evidence and science.

The issue of information becomes critical in making informed choices on climate change and a weak information capacity is having an impact on the resultant policy response in Pakistan. It is particularly important in explaining and justifying policy effort and resources being committed across agencies.

4.1.3 Institutional silos

Chapter 3 displayed a set of key players (MOE, MOFA, PC and the task force) in the climate change decision-making process that are expected to work in close cooperation. However, evidence from the interviews and the literature indicates that while incremental steps have been taken, institutions are largely working in silos, and whole-of-government activity on climate change has not matured as yet. The Ministry of Finance (MOF), a key player in public policy, is missing from this organisational structure and so decision-making is largely confined to environmental officials, planning and development professionals, and diplomats. A civil society official (NG2) confirmed this, commenting that work on climate change in Pakistan is expanding across various government institutions, but is still in silos.

There has been progress in terms of individual institutional building on climate change and sustainable development in various ministries, such as Energy, Agriculture and Water, with climate change emerging as an agenda item in these ministries (NG1). However, such developments have largely been within silos rather than a coordinated or whole-of-government approach (DP1). Many respondents felt that the debate is limited to environmental officials and NGOs and does not substantively include people who are

concerned with major funding decisions. The officials on finance have limited exposure to climate change issues, which impacts on their ability to make progressive decisions on climate change.

The other key problem that emerged in interviews was how various ministries are interacting with each other on climate change, and the silo approach suggested that they were prioritising their own interest rather than seeking an integrated approach. One senior aid agency official (DP1) suggested that various leading energy and natural resource institutions (i.e. Water and Power, and Petroleum and Natural Resources ministries) are dealing with issues of water and energy in a somewhat contradictory manner. The Ministry of Water and Power works on energy while the Ministry of Petroleum and Natural Resources develops policy on fossil fuels, so there is no effective coordination in policymaking on energy and fossil fuels in Pakistan. For example, the former is involved in promoting renewable energy in the country, while the latter is importing fossil fuel for energy needs, and there is no effective coordination between the two ministries (GOP-AEDB 2008). Any potential gains from renewable energy may be offset by expansion of fossil fuels in the country. This, in some ways, is no different from how environmental mainstreaming is happening; a recent study on the environment concluded:

... government policy has tended to be developed piecemeal sector by sector, with the consequence that the body of 'environment relevant' policy is not coherent, integrated or linked to the mainstream (Hunnam et al. 2007, p. 11).

This is not just linked to the development of environmental policy *per se*, but also other related policies on energy. For example, another study (Ali 2007, p. 197) on environmental conflicts and energy policy concluded that:

Pakistan has tremendous potential for having a sustainable energy policy, if appropriate planning measures are put in place. However, the current development trajectory that the government is pursuing raises serious ecological concerns which inevitably translate into impaired development in the long-term. The first step towards an environmentally conscious energy policy would be to have a nation-wide audit of current inefficiencies in the generation and distribution system for power. This must be followed by appropriate pricing and compliance enforcement to prevent losses and perverse incentives for wastage of energy. Once these conservation matters have been addressed, the remaining shortfalls should first be met with plans for expansion of renewable sources, primarily wind, solar, biomass and small-scale hydroelectric. Large hydroelectric

generation projects should only be considered after the guidelines enunciated by the World Commission on Dams have been followed, rather than hastily pushing forward such projects under the banner of national pride or patriotism.

In terms of new organisational developments on climate change, the new agency on disaster management is a good example. A *National Disaster Management Act 2010*³⁶ has been established in Pakistan and key features include: a high-level National Commission on Disaster Management, chaired by the Prime Minister; a new National Disaster Management Authority (NDMA); and a National Institute of Disaster Management. The role and efficacy of the NDMA cannot be commented upon at this stage, but it is a step in the right direction. Given the recent floods and extreme events occurring in the country and the links to climate change, it is expected that a major role for this agency will emerge. The key challenge will be to ensure that it is a substantive part of the structures, processes and mechanisms on climate change in the country and does not work in isolation. As the agency is under the Prime Minister's Office and the commission will also be chaired by the Prime Minister, positive assumptions on its role and power within the decision-making process can be made. However, as mentioned earlier, it is too early to comment on the expected outcome from this structure and mechanism at this stage.

The Planning Commission has had an active role in the development of environmental policy. The next section describes its role in the climate change process and further development in the commission.

4.1.3.1 *Role of the Planning Commission*

One major improvement in institutional processes has been the involvement of the Planning Commission in climate change. The Task Force on Climate Change was chaired by the Deputy Chairman of the Planning Commission, indicating a high level of government interest. Its involvement in climate change matters is helping to raise the national significance of climate change in Pakistan. According to a government official (FG1), "*policy parameters are in place, we need to set up a formal structure under the Planning Commission*".

In the past, a key document, the national conservation strategy (NCS), was also prepared under the auspices of the Planning Commission, with the MOE as the secretariat. Such

³⁶ <http://ndma.gov.pk/Publications/ordinance.pdf>

combined roles provided the right environment for producing the strategy with enhanced consultation and discussion. According to Runnals (1995, p. 20):

These ministries, like their counterparts from the North, are often understaffed, under-budgeted and politically of little influence around the cabinet table. Not surprisingly, strategies and plans rooted in these ministries are often narrowly focussed and have little influence on the country's overall development pattern. From the beginning ... IUCN pressed hard for the NCS to be located in the Planning Commission rather than the environmental agency.

While the work of the NCS is dated, it is important to understand how a major environmental policy drive was rooted and operationalised and the key players involved. The use of the Planning Commission paid off in realising this strategy (Runnals 1995). However, the Planning Commission suffers from organisational challenges as well. For example, the Planning Commission has established an environment section with a focus on climate change. One of the organisational weaknesses of this set-up in the Planning Commission is that there is no permanent core post of the chief environment section³⁷, or was not at the time of this research. This situation is not restricted to the Planning Commission only but was observed in the MOE as well such that some of the key specialist and technical positions are on temporary project posts not part of the core budget of the ministry sanctioned out of the public budget³⁸. This implies that once the projects or activities are over, the staff cannot be retained, thereby reducing their morale for long-term commitment to the organisation. These human resource problems have an impact on the functioning and output from the ministries, reducing their substantive deliveries (FG6).

A new study on the Planning Commission undertaken by the International Growth Center, London School of Economics and Political Science, questions the capacity of the Planning Commission to operate in the new economic policymaking environment in Pakistan (Ikram 2011). The study sums up the major challenges facing the Commission (Ikram 2011:3):

- *The increased globalisation and privatisation of the Pakistan economy have vastly reduced the space for planning by the former methods, whereby the government set targets and could use licensing and other direct controls to help realise them.*

³⁷ Planning Commission records and the interview with official from the Planning Commission.

³⁸ Official records of MOE and the Planning Commission.

- *The Planning Commission does not possess sufficient staff with the qualifications and experience required by the new economic environment.*
- *The passage of the 18th amendment to the constitution of Pakistan has delegated responsibility for several important economic sectors to the provinces. This poses special problems of coordination of ends and means between the center and the provinces, which are made more difficult if the federal and provincial governments are formed by different political parties.*
- *The Planning Commission has lost substantial parts of its role to other ministries, especially the Ministry of Finance. If the Planning Commission does not quickly adapt to the new economic environment, rethinking its role and adjusting its focus and methods, its remit will be confined to the public sector development program, whose contribution to the country's development effort is steadily decreasing.*

This five-year planning framework and the development approach based on a public sector development program model of investment is now under policy revision. This is anchored by the new deputy chairman of the Planning Commission, who is arguing for strong private sector initiatives. The government has recently approved a new economic framework, outlining a growth strategy to be private sector led, using cities as engines of growth and a limited role for the government (GOP-PC 2011). In this economic framework document, the subject of climate change and environment are relegated to the appendices. How this overarching framework document on economic priorities will connect with the new climate change policy being finalised by the government is unclear. The people engaged in development of the new economic framework have been largely economists, while the policy on climate change has been led by environmentalists. To what extent they have been engaged and to what extent any implementation plan will include climate change as a core concern cannot be commented on at this stage, but the current apparent direction is not conducive to CPI.

In addition to the organisational and institutional issues identified in the previous section, the interviews identified challenges in linking various mechanisms and the development of various policies. For example, there was a clear disconnect between the inclusion of stakeholders in the structures and processes of government and the actual translation into affirmative policies. Moreover, there was no genuine consultation on an ongoing framework for institutional coordination – various committees and task forces were set up, such as the Task

Force on Climate Change and the Prime Minister's Committee on Climate Change, but were not coordinated. This was confirmed by a senior government representative (FG5):

Various task forces have been created and disbanded but there is no formal links with existing formal processes within the planning commission that approves projects/programs.

This implies that while task forces and committees may do useful work, they are not connected to the formal structures and thus lack influence on existing or future policies. Some of the recent literature (IUCN-Pakistan 2007; Oxfam 2009; Lead 2010) finds that scientific organisations, NGOs and donors have influenced the climate change policymaking process. Mainstreaming and integration across institutions was found to be missing and challenging in Pakistan, one environment aid agency official (DP2) mentioned that there is no serious process for interdisciplinary and interministerial consultations and major ministries, such as planning, finance, water and agriculture, need more climate change focus.

4.1.4 Laws, plans and policies

Pakistan has been a leader in developing environmental policies and strategies ahead of other developing countries. Prior to the UNCED conference in Rio in 1992, it already had in place, *inter alia*, a national conservation strategy and an environmental ordinance (1983). This was further augmented by new legislation and policies on the environment in 1997 and 2005. The *Pakistan Environmental Protection Act* and the National Environmental Policy were agreed on in 1997 and 2005 respectively. The National Environmental Policy (GOP-MOE 2005) did include some reference to climate change and included the need for a climate change policy and action plan, a national CDM authority and an operational framework for effective management of the CDM process. Even by 2005, the MOE had not identified adaptation as an issue, but this emerged as the priority issue from the interviews and discussion with key stakeholders in 2010.

These policies and laws did not directly address climate change, and while they could accommodate some aspects, they were never created or structured to address the complex issue of climate change. Pakistan has a sound track record of useful public policy documents and plans on the environment; the challenge is that they are not connected or integrated. Furthermore, the implementation capacity of existing environmental policies is weak. Hanson et al. (2000) summarise their evaluation of the NCS:

- *Achievements under the NCS have been primarily awareness raising and institution building rather than actual improvements in the quality and productivity of environment and natural resources.*
- *The NCS was not designed and is not adequately focused as a national sustainable development strategy.*
- *The NCS process has strengthened civil society institutions and their influence, and enhanced the capacity of public institutions.*
- *NCS implementation capacity requires much improvement. NCS continues to have a major catalytic role in furthering Pakistan's sustainable development agenda. However, it needs refocusing and closer link to achievable development outcomes; this should constitute the agenda of the next phase of NCS, here referred to as NCS-2.*

According to another study on environmental policy in Pakistan:

The current schedule of environmental policy document is confusing as it is not clear how they relate to one another. There is an outstanding task of rationalising the disparate policy statements, strategies and plans into a coherent integrated framework (Hunnam et al. 2007:10).

Two clear aspects are emerging from both the literature and the interviews: the policies are not connected and their implementation is weak. Policy, legislative and institutional gaps were clearly noted in a study by the Asian Development Bank:

Despite a fairly adequate environmental legislation (Pakistan Environment Protection Act 1997) and related policy frameworks together with supporting institutional mechanisms in Pakistan, there are various policy, legislative and institutional gaps (ADB 2008, p. 8).

Furthermore, the procedures under environmental laws do not specifically address climate change. Environment impact assessment (EIA) is used as a mechanism and laid down legally as an Act of parliament, but does not address climate change or larger environmental issues. One former government official and now a researcher (RO3) remarked, "EIA is a tool for decision-makers; it still remains stand alone and not integrated in project design". Another government official dealing with EIA (FG4) remarked that EIA procedures and guidelines do not specifically address climate change, which remains a major challenge. The MOE is now undertaking a study to amend the environment act with a view to addressing cross-cutting issues, such as

climate change. This will improve the legal capacity of the act to deal with climate change, when completed.

The government has also drafted Vision 2030 (GOP-PC 2007): “*Developed, industrialized, just and prosperous Pakistan through rapid and sustainable development in a resource constrained economy by developing knowledge inputs*”³⁹. While Vision 2030 is aspirational in character, the planning frameworks are more extensive and involve large consultations. A recent study (IUCN-Pakistan 2009: 25) commented on the Vision 2030 statement:

There is a brief mention under ‘Challenges – mitigating climate change’ and a rather half-hearted statement on climate change without any clear direction on what the vision is or where it is supposed to take the country.

Issues such as climate change and the environment are relegated to a single chapter in the planning frameworks rather than a holistic inclusion integrated in all major issues (e.g. energy, water and agriculture). One government representative (FG2) confided that, “*Climate change was addressed as a fashion, not as a real threat to the economy*”. Another government official (FG5) remarked that the five-year plans are not regularly updated and integrated in response to emerging understanding and confined to project-based thinking without effective engagement with vision and programs.

Many documents (World Bank 2006; ADB 2008; Oxfam 2009) praise the government for many of the policies, laws and plans but highlight the weakness in implementation efforts. It is an unfortunate reality that many of the policy settings are in place, which, if properly executed, would yield real improvement in climate and environmental protection. This research focuses on laws, plans and policies on the environment from 1992 to 2010 that have been publicly released. While conducting this research, it emerged that the MOE has finalised a national climate change policy that will be submitted to the cabinet for approval and will be released sometime in 2011. As the contents of the climate policy have not been publicly released, this chapter cannot comment on the content, beyond suggesting that the undertaking of drafting a climate change policy represents positive development.

³⁹ <http://www.pc.gov.pk/vision2030/Pak21stcentury/Chapter%20Wise/07-Executive%20Summary.pdf> accessed October 14, 2012

4.1.5 Finance

Finance was identified as a barrier to the integration of climate change into normal development activity and processes by government and civil society respondents. This was not just limited to monetary matters but also to the inclusion of officials of the Ministry of Finance in the processes relating to climate change. “Finance is hardly included in any serious discussion on climate change, which is very alarming” remarked an interviewee (FG2).

The UNFCCC provided legal commitment of developed countries to the provision of financial resources and technology to developing countries to address climate change. While the global finance provision is slow and inadequate, the current financial crisis in Pakistan and the resultant loss to the economy from the massive floods in 2010 is not helping in domestic resource mobilisation. As a result, there is no focus on domestic finance provision or synergies and co-benefits that could be achieved.

According to a former government minister, the “*push for mainstreaming requires cost-benefit analysis; quantifying costs/benefits is very important for mainstreaming and action by policy-makers*”. So, while provision of finance is an impediment, the information base to justify investment is also lacking. Pakistan faces serious financial difficulties and when this is combined with a lack of proper information on climate finance, it does not empower policymakers. The only available information in this direction is the cost of environmental degradation done by the World Bank (2006):

The urgency of addressing Pakistan’s environmental problems has never been greater. Conservative estimates presented in this report suggest that environmental degradation costs the country at least 6 percent of GDP, or about Rs. 365 billion per year, and these costs fall disproportionately upon the poor (World Bank 2006, p. i).

A recent estimate (Asian Development Bank et al. 2010) on the floods in Pakistan in 2010 calculated the costs of recovery and reconstruction in the range of US\$8.74–10.85 billion. The reports and information that are generated are responses to specific needs; for example, in this case, a reactionary measure on the financial implication of the devastating floods. At this point, no firm adaptation costing work has been done on an issue that has become real for Pakistan. In the past, studies on mitigation, such as the ALGAS study (1998), identified national GHG abatement action plans and a portfolio of GHG abatement investment projects, but the government did not embark upon comprehensive financial planning on the options presented.

In Pakistan, the UNFCCC Secretariat is providing support to the MOE to undertake a National Economic and Environmental Development Study (NEEDS), which has recently been completed (Khan et al. 2011). NEEDS has done some preliminary calculations on mitigation and adaptation investment needs: the additional financing costs for mitigation that range from US\$8 billion to US\$17 billion (2010–50), while the cost of adaptation for a 40-year period (2010–50) have been estimated at US\$10.70 billion per annum. A comprehensive economic modelling process on climate change – such as one undertaken by Ross Garnaut (2008) in Australia and the Stern review (2007) – has not been undertaken on climate change in Pakistan. This is a problem not just confined to Pakistan; the world is lacking such updated and comprehensive national country information on climate costs on both adaptation and mitigation. This is now an emerging research area; for example, the World Bank is undertaking an Economics of Adaptation to Climate Change study (World Bank 2010) for seven developing countries: Bangladesh, Mozambique, Bolivia, Ethiopia, Ghana, Samoa and Vietnam.

The inadequacy of information on economic costs raises problems for financial planners, particularly in developing countries, to undertake proper budgeting in line with the low carbon and climate-resilient needs of the country. International climate finance has to have synergy and be coherent with domestic climate finance and enable effective integration, which cannot happen without proper financial information, which itself requires a strong basis in other climate change information. However, the initial results from the UNFCCC study (Khan et al. 2011) provide useful starting points for making an informed policy decision.

The concept of green budgeting is developing worldwide, but its application in Pakistan is severely limited (FG1). Environmental projects are presented to the Planning Commission for approval and this has recently begun to include projects that can be qualified under the climate change rubric. Even then, approved projects lack allocation of necessary finance, which is carried out by the Ministry of Finance. Another problem that emerges is lack of proper accounting of various climate change programs and initiatives in Pakistan, as no clear detailing method has been ordained by the government (FG1). One recent study (Khan et al. 2011) that has documented climate change allocations concluded that, in the past two fiscal years (2007–09), Pakistan has allocated approximately US\$14.5 billion from its national budget to climate-related projects, matched by a foreign assistance of US\$3 billion towards these projects. Such documentary evidences on climate change projects are rare, and since this study targets two years only, it is unclear whether this is a regular pattern of budgetary allocation and expenses on climate change.

At this time, there is no policy or directive requiring a proper breakdown of national climate change investment in mitigation and adaptation to be done periodically, and the above calculations are rare. This will be important in the future for Pakistan to show the international community, as part of Pakistan's obligations to UNFCCC, its voluntary efforts on climate change and such documentation may become necessary.

The financial situation has now been further complicated as Pakistan has once again become an IMF aid recipient (since 2008)⁴⁰, which has forced the government to undertake serious cuts in development spending to meet IMF fiscal deficit targets (GOP-PC 2010a). Though this research does not explore the implications of the IMF aid program on climate change and environmental programs; the conditionalities of the IMF aid program and the requirements to meet tight fiscal deficit targets reduces the ability of financial planners to devote resources to climate and environmental programs and projects, particularly in the short to medium term.

In terms of domestic revenue generation, the CDM is a good example. The renewed interest in CDM in the MOE was primarily driven by a desire to generate private sector interest and funds from the global market mechanism. However, the CDM policy never included a charge or a tax on the investment. Such a charge may be difficult given Pakistan's security and governance situation and may distract investors. Some of the other policies under consideration include the development of a national climate fund (FG1).

An important finding from this empirical work is that finance does not act alone; also required is adequate information, which at present is not sufficiently available in Pakistan. Investment in climate policy cannot be easily justified against competing development needs and constrained public finance.

4.1.6 Civil society, capacity and engagement

It is unfortunate that Pakistan has not yet established information systems, policy structures and has limited institutions for addressing the issue of climate change. Yet, Pakistan has a large infrastructure of public and civil society institutions that can be tapped to integrate climate change adaptations in the multifaceted development process (Oxfam, 2009: 11)

⁴⁰ http://www.sbp.org.pk/m_policy/a_imf/2008/IntlMonetaryFund-20-Nov-08.pdf (accessed 16/2/2011).

A key finding from the interviews and the author's observations is that civil society is meaningfully engaged in the environmental process in Pakistan. In the past, the national conservation strategy was driven by a wider stakeholder network comprising officials from civil society and the private sector, and the *Environmental Protection Act 1997* was framed with wide consultation (Runnalls 1995). However, analysing the history of the mechanisms and processes, this partnership with civil society has remained limited, fragmented and not sustained in either environment or climate change. One fundamental reason for the downfall in this partnership between the government and the civil society was that this process was not institutionalised. The partnership emerged mostly from the active interest of high-level officials in the public sector and civil society and not a system-wide response for a sustained collaborative partnership structure. According to Runnalls (1995), Aban Marker Kabraji, the then head of IUCN – an organisation contracted to work with the government of Pakistan for making the national conservation strategy – had strong access to economic and political power and was one of the major factors contributing to the high visibility of the strategy. The Task Force on Climate Change also includes senior civil society officials including the chief executive officer (CEO) of LEAD-Pakistan and a senior advisor to SDPI, a major policy think tank in the country. Given the serious governance and security challenges in Pakistan, inclusion of such officials helps keep climate change on the political agenda due to the strong networks of these individuals. However, as such an inclusion is based on individual interests and positions, it is difficult to predict whether the committee or mechanism will survive or continue to have influence if these high-profile individuals leave the committees.

Civil society is not a single monolithic unit in Pakistan. It is diverse and comprises people with multiple roles and positions from academia, the private sector and governmental agencies. Both retired and functioning civil servants work within the environmental NGOs. For example, two heads of a major environmental organisation, IUCN-Pakistan, were government officials from Pakistan's forestry sector. While such representation builds capacity in the NGO sector, the government agencies are deprived of talented civil servants. In terms of implementing sustainable development, an interviewee (FG2) remarked that the "private sector is responsible for implementing 80% of sustainable development initiatives and are hardly included in any substantive discussion on climate change".

Respondents identified a lack of coordinated focus on climate change in civil society. Even where civil society involvement occurred, it was usually the same CEOs or focal persons from civil society in almost all meetings and committees, so the extent of capacity building in civil

society cannot be ascertained. This is beginning to change, as there is a serious effort in creating a local climate network in civil society (NG1), with larger involvement of professionals to provide an institutionalised civil society response, thereby moving civil society from a silo-based approach to a more structured form of engagement. According to a civil society interviewee (NG1), *“Climate change is now beginning to be addressed in civil society; a delayed start, but still weak”*. This is in sharp contrast with traditional environmental issues, in which civil society participates actively and substantively in steering major environmental agendas in Pakistan. In the past couple of years, civil society, including LEAD, IUCN and Oxfam, has been included in the country delegation to the UNFCCC meetings. This has helped build capacity in civil society and provided needed research support to the MOE. The recent floods in Pakistan in 2010 have rekindled the role and importance of civil society in helping in climate change efforts.

4.1.7 Global multilateral processes

In Pakistan, the policy and institutional response to climate change is embedded in the national environmental context, the wider political economy framework and the international policy agenda including, inter alia, Agenda 21, UNFCCC and its associated Kyoto Protocol. Pakistan became a signatory to the UNFCCC in 1994 and acceded to the Kyoto Protocol in 2005. It is also a party to other global environmental treaties including the Montreal Protocol for Substances that Deplete the Ozone Layer, the Convention on Biological Diversity and the Convention on Desertification.

At the global level, Pakistan has had two tenures of international representation of the wider G-77 and China group of countries at the UN forum – one in 1992 and another in 2007. These years, 1992 and 2007, were significant for multilateral development on the environment and climate change respectively, and Pakistan played a major role in such efforts. Important milestones included the adoption of Agenda 21, the Rio Declaration and two multilateral conventions on climate change and biodiversity in 1992 and the historic Bali Action Plan on climate change in 2007. In some ways, a competing set of policy priorities are happening at the national and international level – while an effort is being made to represent the country effectively at the global level, national environmental efforts are proceeding at their own pace and often lag behind international policy demands.

The empirical research of this study identified global multilateral processes as a key issue affecting domestic climate policy in Pakistan. There were two related issues: one, the weak performance of developed countries on climate change and limited support to developing countries, such as Pakistan; and the other, the burdensome nature of the negotiating process and related meetings and their impacts on work at home. Both government and civil society interviewees mentioned that the lack of lead climate action by advanced countries has provided an excuse for weak domestic action and measures. In terms of domestic implementation, no aggressive and follow-up interest is noted and is not synchronised with national policy mechanisms. "Convention ratification is inconsistent with national policy process," remarked one government official (FG2).

In the view of several interviewees, policymakers were more interested in attending international negotiations rather than addressing climate change at home. There was a wider interest in attending international environmental meetings generally, and not just confined to climate but also other global environmental negotiations. This was further complicated by the fact that one senior official in the MOE was the focal person for a number of MEAs, and participation in the international meetings complicated decision-making and the lack of action on climate change at home. One government official (FG2) remarked:

... donor sponsored international participation, weak budget lines for meaningful participation; non-professional stakeholders are missing with delegates decided at the last minute, not institutionalized and private sector not included in delegation.

While there has been an interest in international participation, no follow-up action on implementation is sustained at the national level. This relates to frequent changing of staff on climate change at the ministry level and regular wider changes to senior management.

4.1.8 Conclusion

This chapter has highlighted that incremental progress is being made in enabling CPI across various structures and processes of the government in Pakistan. That this process has not been institutionalised emerged strongly from the interviews and the literature. Evidence also pointed to the wider problems of governance in Pakistan that impact on many of the emerging challenges of climate change in the country. Some of the challenges were not entirely due to the problem of climate change in the country but related to the wider structural problems surrounding finance and institutional collaboration. The next chapter undertakes a similar

study of an emerging economy, Malaysia. Then a synthesis of the findings from Pakistan and Malaysia is presented in Chapter 6.

Chapter 5: Malaysia

There is limited academic research on climate change policy in Malaysia: it is a developing topic, which makes this research challenging and timely. In particular, there is little analysis of the national policy systems, structures and processes or of the efficacy of an integrated climate and development approach at the national policy level. This research attempts to fill this gap. This chapter explores the existing or emerging CPI mechanisms (structures and processes) at the national scale in Malaysia. The findings are derived from empirical work in Malaysia, where in-depth, semi-structured interviews of key informants were undertaken along with analysis of government documents, published reports and academic and grey literature. The literature on the environment and climate change in Malaysia is limited but is still more detailed than in Pakistan. In particular, the literature on climate change is only starting to grow with greater interest in energy issues. The limitations and challenges of the research were highlighted in the introduction and methodology chapter. This chapter will focus on the findings from the interviews, literature and documents.

5.1 *Emerging themes*

The themes distilled from the interview data and categorised under different headings are (Chapter 1):

- **Information and reporting:** information and reporting are two essential elements of any communication mechanism on climate change. Information and access of information, particularly at the right time, emerged as important barriers.
 - **Institutional silos:** Malaysia has a well-functioning civil service system, now increasingly aware of climate change matters. However, the institutions still work in silos.
 - **Role of the NRE:** the NRE is the lead ministry on environment and climate change in Malaysia. This theme identifies its role and capacity to further climate change in Malaysia.
 - **Role of national planning:** Malaysia has an established five-year planning system and a central involvement of the Economic Planning Unit (EPU) in economic and development decision-making. This theme explores the role and efficacy of such mechanisms for CPI.
- Growth:** as an emerging economy with a strong desire to be a developed nation by 2020,

growth is an essential policy focus in Malaysia. This theme looks at how such growth commitments can lead to or reduce CPI.

- **Global multilateral process:** Malaysia has been effectively engaged in the multilateral process and the theme looks at how this can further or limit CPI.
- **Other issues:** among other issues, finance and civil society emerged as lead contenders in CPI and the results identify their role in CPI.

Identification of the themes brings out the key issues and barriers as seen by the policy community in Malaysia. Many themes do have overlapping distribution, as the issues are similar. The themes are discussed in detail in the section below. Chapter 6 will further synthesise the findings from Malaysia and Pakistan with reference to the conceptual and theoretical perspectives outlined in Chapter 2.

5.1.1 Information and reporting

Information and reporting emerged as a key theme in the interviews. Although research capacity is relatively high in Malaysia compared with other developing nations, access and provision of information, particularly at the right time, was still identified in the interviews as a barrier. There was a consensus among the civil society interviewees that information flow from the government is limited and slow, which prevents informed discussion on climate change. There are legal mechanisms in Malaysia to control the flow of information from the government and the *Official Secrets Act, 1972* is one of them. The *Official Secrets Act (OSA)* prevents the unauthorised publication of government information and documents. One civil society respondent (NG2) remarked that, "*the Official Secrets Act is a major impediment in allowing meaningful discussions*". The release of information is subject to the provisions of the act from all government material and prevents effective discussion and absorption into public debates of issues relating to sustainable development. This information, in the view of civil society respondents, is not directly connected to the issues of national security that the act is primarily concerned with. While there are no literature references to support this statement, the author experienced difficulties in accessing information on the second national communication that was not approved by the cabinet at the time of the research. Despite being a very technical document, the information was not shared nor discussed in a substantive manner by both the project professionals working on this and policy level officials in NRE. One could draw a conclusion that OSA may at least be a factor in this attitude.

In terms of the structures to develop and implement climate policy, insights from national communication and the climate policy preparation process are useful. At the time of the interviews, Malaysia's second national communication (NC2) was under preparation and at an advanced stage of completion. Its official release to the public and the UNFCCC was subject to cabinet approval and clearance. National communications cover inventory, mitigation and adaptation and waiting for the full NC2 public release has prevented data in the national inventory that could have been released to guide policymaking in the energy and associated sectors in the country (NG2). Malaysia has been in official compliance of the UNFCCC reporting system, as reporting for developing countries is subject to availability of funding from the Global Environment Facility. However, a gap of over ten years between the two national communications – NCI in 2000 and NC2 in 2011 – also emerged in the interviews as generating information barriers in addressing climate change at the national level.

Malaysia's NC2 has now been finalised and submitted to the UNFCCC (Ministry of Natural Resources and Environment 2011). In terms of policy recommendation on integration and increasing information and awareness levels on vulnerability and adaptation assessment, the NC2 recommends (p. 65):

- *A formal V&A capacity building programme should be developed and implemented immediately for all sectors including financial, economic and social fields. This should include education and training, development of models and information and communications technologies (ICT) infrastructure as well as recruitment of experts and specialists from around the world. Special research programmes should also be implemented to fill-in the existing knowledge and information gaps.*
- *An integrated V&A programme for all sectors should be implemented and based on a regional or eco-system based approach. This programme should also include an integration of data and information collected for sharing between all sectors.*
- *To encourage wider participation of professionals and the public, climate change and V&A data and information should be readily accessible to them such as through the internet. At the same time, guidelines for V&A should be developed for all sectors including the public. Special programmes should also be developed to assist the public in selecting options for adaptation to climate change.*

A relevant feature for this discussion is the issue of information and data integration highlighted in the recommendation. While this recommendation is not directly linked to the *Official Secrets Act*, the fact that increasing public information on climate change data has been identified in a public document represents a step forward and an acknowledgement of the need for a more widely informed and evidence-based policy discussion.

In addition, there was a disconnect and lack of formal association between the international reporting and national policy process – these are not formally connected despite similar stakeholder involvement. This was echoed by several interviewees, with one remarking that (NG2) “The national and international reporting have absolutely no link, this is very troubling as there are a lot of synergies between the two” The compilation of NC2 had a detailed organisation structure with a project steering committee, a project management group and working groups on inventory, vulnerability and adaptation and mitigation. To what extent these mechanisms were connected to the national planning processes, such as five-year plans, was not clear, as there was no formal requirement to report on this. The NC2 process was identified as a very project-based exercise not fully institutionalised and connected to national planning systems and processes According to one interviewee (RO5) “The National communications is essentially a project based exercise although efforts are now being made to try and institutionalize this but it is still a very ad hoc process”.

The two processes – national communication and the national planning – continue in separate trajectories with the former serving national planning needs and the latter a reporting mechanism for the climate regime failing to utilise synergies that link the two together. There is no formal international requirement to link the national communication with national policy process so the opportunity to exploit this potential has not been fully achieved in the country as the national communication still remains a project-based exercise. One research official commenting on the role of the government in the national communication activity and the need to generate information on climate change (RO1) stated:

Government departments are actively involved in preparing the national communication, but still there is a need to develop a repository of information on climate change.

The international guidelines that were used in the preparation of NC1 and NC2 in Malaysia were agreed and adopted at the UNFCCC 8th meeting of the Conference of Parties in 2002. The international experts and negotiators in UNFCCC are now discussing updated guidelines for developing countries for future national communication submissions and it is anticipated

that more stringent efforts at national levels will need to be made to update and release information on inventory, mitigation actions and adaptation needs consistent with the latest science and country requirements. This research does not explore the implications of this change for national capacity needs any further, but it is important to recognise that this change will have important implications for national capacity needs in Malaysia and more widely across the developing world. In the authors view, it will be useful for countries like Malaysia to institutionalise this preparatory process on national communications by having dedicated research facilities for generating information and data sets relevant to inventory, mitigation and adaptation.

In terms of priority needs for Malaysia for implementation of the UNFCCC, the NC2 (Ministry of Natural Resources and Environment 2011) documented needs identified in the National Capacity Self Assessment Process for Global Environmental Management:

- Coordination among various ministries and departments in terms of addressing climate change could be further improved. As climate change matters are being mainstreamed into national state coordination and policy planning, the roles and mandates of respective agencies in addressing climate change need to be clearly expressed.
- There is a lack of technical capacity, scientific information and research and development to carry out vulnerability assessments and also implement mitigation options. One of the reasons is that there are insufficient dedicated research programs and funding to support decision-making related to addressing climate change.
- Eventually, the implementation of a strategy and action plan on climate change will require an overall and comprehensive monitoring mechanism. Information may lie with many implementing agencies. It is important to share relevant information for decision-making and mechanisms to do so are required.

The National Policy on Climate Change (Ministry of Natural Resources and Environment 2009) was approved by the cabinet in November 2009 but was released in 2010. Civil society interviewees welcomed their participation in the discussions on framing a climate change policy but were unaware of the extent to which their input informed the final climate policy. On national climate policy, an interviewee (NG1) remarked:

... while we were happy to be provided an opportunity to respond, to what extent our input has gone into the national climate change policy is still unclear, as we weren't provided the final draft.

In terms of work on climate change and sustainability matters, allowing a meaningful and informed discussion among key stakeholders from the government and civil society was identified as a necessary condition for the success of the policy or appropriate instrument or measure.

In terms of increasing information on climate change, a Stern-type review has been planned by the Economic Planning Unit (EPU) to ascertain costs for climate mitigation and adaptation in Malaysia. This was also identified as a key requirement to enhance climate change policy in the country by the majority of the interviewees. There is a substantial literature on global climate financing needs and requirements (Stern 2007; UNDP 2007b; UNFCCC 2008; McKinsey & Company 2009; UNDESA 2009). However, research on national climate costs in mitigation and adaptation has only recently started. For example, the World Bank has completed an adaptation costing study for seven developing countries (World Bank 2010). According to many interviewees, this lack of detailed financing information on mitigation and adaptation at the national scale prevents effective and informed climate change and development decision-making, particularly in developing countries. On the usefulness of this review, one government interviewee remarked (FG5):

This review will be first of its kind and will provide much needed information on the economics of climate change in Malaysia.

As in Pakistan, CPI is constrained by the lack of information that could inform appropriate levels of action by different agencies, relative to their areas of concern and representation.

5.1.2 Institutional silos

Institutional and policy measures to address climate change are emerging in Malaysia (Table 13). The institutional and policy development on environment and climate change has increased awareness on climate change in the ministries, but respondents identified that *"climate response was still in silos"* in respective ministries and effective coordination on key policy sectors was lacking. A culture of greater environmental awareness and understanding of the need to address climate change was observed in various ministries including the key

relevant ministries of environment, energy, economic planning, science, physical planning and housing. However, most interviewees stated that such awareness and understanding was not resulting in a coordinated policy response on climate change. One interviewee commented (DP1):

Although climate change is very popular at higher levels, ministry level is very static, unclear and trying to understand policy directions on climate change.

The role and contribution of the bureaucratic system on climate change was identified as a key barrier in promoting CPI. An interviewee (DP1) remarked that, *“bureaucracy still remains a barrier, having unclear communication and unclear understanding on climate change”*.

Many interviewees observed that the policy makers generally have a weak understanding of climate change and thereby lack a comprehensive response to address climate change. Furthermore, a facilitative attitude on comprehensively addressing climate change was found missing, as department goals were unclear (RO2). This research was able to identify some difference in climate thinking between the bureaucracy and the political leadership. While the former seemed satisfied with incremental climate action in tandem with the global climate response, the latter, under the present Prime Minister, appeared determined to move forward on climate change and were announcing significant policy moves on climate change. The political leadership perceived the opportunity in the new global industrial transformation towards a low carbon future and wanted Malaysia to have a share in it (RO4). For example, the Prime Minister of Malaysia announced, at the Copenhagen Climate Conference in 2009, voluntary carbon intensity reductions of 40% from 2005 levels by 2020 (Oh & Chua 2010; Oh et al. 2010). However, Malaysia chose not to associate itself with the Copenhagen Accord⁴¹ and did not provide the nationally appropriate mitigation actions pursuant to the accord at the time of writing. On a more positive note, this voluntary announcement of emissions reduction is mentioned in the Malaysian NC2, thereby providing an avenue for policymakers to work on national policy measures to translate this voluntary commitment into relevant mitigation actions (Ministry of Natural Resources and Environment 2011).

This change in political thinking on climate change was in sharp contrast to earlier issues arising from the eco-imperialism mindset in the political leadership of the 1990s (Hezri & Nordin Hasan 2006). Given the policy announcements and endeavours on climate change in

⁴¹ http://unfccc.int/meetings/cop_15/copenhagen_accord/items/5262.php (accessed 10/3/2011).

the country, positive advances in awareness and thinking on climate change are emerging in the political leadership. One government interviewee (FG1) wanted the placement of climate change in the office of the Prime Minister to allow for greater policy integration and implementation in Malaysia and benefit from the power of the political leadership. He stressed the importance by suggesting “climate change has to be in the office of the Prime Minister, if any serious action is required to be taken in Malaysia”

The Malaysian energy sector is heavily reliant on petroleum and natural gas (Rahman Mohamed & Lee 2006). Many respondents felt that policy integration across sectors was difficult both for energy security reasons and the political power of energy industries. In particular, the power of Petronas – the key *parastatal* on petroleum – was identified in the interviews. This view was echoed by one interviewee (NG1) who remarked that “Policy integration is a problem, when we deal with energy” The issue of incremental and slow response to energy diversification and the wider issue of policy alliance across energy, environment and economic sectors is a broader systemic problem in Malaysia (Hezri and Nordin Hasan 2006; Rahman Mohamed & Lee 2006; Chua & Oh 2010; Oh et al. 2010).

An over-dependence on non-renewable fossil fuels in Malaysia’s energy sector has made the country extremely vulnerable to volatile prices and interruptions to the fuel supply, especially since Malaysia is expected to become a net oil importer by 2030. Concerted efforts undertaken by the government so far are slowly gaining momentum ... although being met by countless obstacles from numerous parties ... While it is quite obvious that Malaysia is not ready to embrace renewable energy (RE) totally and replace non-RE with RE in the near future, the government, non-government agencies and public should not be complacent (Oh et al. 2010, p. 1252).

One interviewee (RO4) identified a clear need for bold endeavours by the administrative system in the government to capitalise on the high-level political leadership interest in a green economy and remarked “There is currently a lot of interest being taken by the Prime Minister in green issues, if the bureaucracy fails to capitalize on this issue, it will be quite unfortunate”. Given Malaysia’s interest in becoming a fully developed country, and for energy security reasons, there was an emerging realisation on the part of energy policymakers and the political leadership that Malaysia would run out of fossil fuels in the not-too-distant future and therefore needs to move towards a greener economy less reliant on fossil fuels. However, any success depends on what extent they can move against the power and interests of the fossil

fuel lobby in the country. One retired government official and a current researcher (RO1) remarked that, *“support for renewable energy is there, but insufficient; conflicts due to subsidies on fossil fuel”*.

Malaysia is eager to move forward in pushing the drivers for green economy and in its efforts to become a high-income country by 2020 (National Economic Advisory Council 2009). Significant steps, such as establishing new policies and statements, have been made, including the Green Technology Policy and National Policy on Climate Change, and new institutions, but to what extent this momentum can be sustained cannot yet be assessed. For example, at the institutional level, the establishment of the Ministry of Energy, Green Technology and Water is a significant development. However, given the embryonic nature of these initiatives, it is too early to comment on how the policies and institutions might drive an envisaged green economy in Malaysia. According to one interviewee (RO4), *“These new initiatives on Green Technology are more aspirational goals and statements rather than any concrete initiatives in embedding green technology in the national policy process”*.

Many interview respondents questioned the institutional link between various ministries. There is communication between the NRE and the Ministry of Energy, Green Technology and Water, but at a superficial level (FG1). One interviewee (DP2) complemented the establishment of Ministry of Green Technology by saying *“Establishment of Ministry of Green Technology is a step forward in institutional mechanism; how and what they are going to do is not really understood”*. At the time of this research, no action plan for green technology had been prepared and the mindset of the bureaucracy had been incremental in moving towards a green economy. On a more positive note, the two high-level committees on climate change and green technology have been merged to form one committee on climate change and green technology.

This research has documented, across the national scale, the increasing complexity of an integrated institutional approach to climate change in Malaysia and confirms the findings of recent research on environmental challenges in Malaysia (Hezri & Dovers 2011):

Barriers to bringing sustainability in the mainstream are deeply entrenched within institutions. Although the economy and environment are interdependent, planning has been formulated within silos, leading to fragmentation of regulation and implementation (Hezri & Dovers 2011).

The barriers and challenges presented in this section are deep and entrenched within the public policy institutional system. For effective progress on CPI in Malaysia, the silo-based culture within the institutional systems will need to be addressed.

5.1.3 Role of the Ministry of National Resources and Environment (NRE)

Most respondents felt that the role and contribution of the NRE in steering climate change and sustainable development policy, and the NRE's power and influence within the public governance system, has been patchy, *ad hoc* and haphazard. According to one interviewee (DP1): "*NRE is a tiger without teeth*". This statement neatly sums up the role and contribution of the NRE within the Malaysian public service system and characterises the NRE as a ministry with unlimited responsibility but without effective powers. Given the overriding goal of becoming an advanced country in 2020, the role of the NRE was not seen to be critical by decision-makers in Malaysia. Environmental degradation and lack of mainstreaming sustainable development in public policy has been the result of insufficiently rigorous policy attempts (Sani 1993; Hezri & Dovers 2011).

Among the resourceful and influential ministries, finance, EPU, education and the Ministry of International Trade and Industry were identified in the interviews, whereas the NRE was seen as a weak ministry. This was further complicated by having a current minister from Sarawak and not from economically powerful Peninsular Malaysia, which had some impact on his power within the political system (NG1). However, the demographic of the minister should not be overestimated, as many interviewees felt that even if the minister was from Peninsular Malaysia, he would have still been weak, given the status of the NRE in the public policy system. In terms of revenue generation and role in energy and green technology, the NRE was neither a revenue generating ministry nor in any leadership role or position in the energy and green industry sectors. This weakened the NRE's influence on policy directions and implementation plans on energy and green technology and thus on climate change.

As a UNFCCC national focal point, the NRE was tied to the coordination of Malaysia's commitment under the convention and hence its role in domestic climate change policy was vague and at times at odds with Malaysia's overall economic goals. The NRE has requested the EPU to coordinate a Stern-type review on the economics of climate change in Malaysia and therefore the NRE will not lead this important study (FG5). This, in some ways, was evident of some CPI, as the EPU as the key economic planning agency will be coordinating a major climate

change review. However, as the idea of the review did not reach a detailed design stage at the time of writing, it is too early to comment on the extent of integration through this mechanism in Malaysian public policy structures and process. One respondent remarked (NG2):

For a long time, we didn't have institutions to coordinate; it is beginning to happen, but we don't have evidence to see it happening.

The Montreal Protocol was also handled by the NRE and the model for its implementation in Malaysia was identified in the interviews as a positive one that could be used for climate change. One government representative responded (FG3):

Montreal Protocol was a useful model for mainstreaming implemented by NRE, where industries developed a planned phase-out.

Malaysia's success in implementing the Montreal Protocol can be seen in the decline of both the import and consumption of chlorofluorocarbons – reduced from 3442 metric tonnes in 1995 to 662 tonnes in 2005 (Chua & Oh 2010). Developing countries do not have to demonstrate such phase-out of high carbon activities under the climate regime, as all mitigation actions are voluntary. However, with the expected transformation of the multilateral system through the UNFCCC involving a voluntary bottom-up approach (Bodansky 2011), details of mitigation actions from developing countries will be required to seek any global funding. It will therefore be useful for countries like Malaysia to develop an institutional mechanism to detail such mitigation actions and seek international funding, where possible.

Climate change involves a whole cross-section of economic activities and interests, while the substances or chemicals that the Montreal Protocol tries to control are few and the replacements are now in use by the relevant industries. The design of the global Montreal Protocol system – planned phase-outs with financial contribution from advanced countries – was a major factor in achieving a suitable national policy response and it showed a significant degree of success in developing countries. As carbon is a product of key economic activities, and as the global climate change process does not work in the same way as the Montreal Protocol, the national policy response to climate change would be different. However, the institutional success of the Montreal Protocol in Malaysia does provide a positive starting example of what has worked in Malaysia and could be further analysed.

5.1.4 Role of national planning

Malaysia is driven by a strong tradition of five-year plans undertaken by the EPU. The interviewees identified positive movement on the environment and sustainable development from the seventh plan onwards (1996–2000). The overarching framework of addressing climate change is the sustainable development goals embedded in the third Malaysia Plan (1976–80) (Malaysia 1976). The current Tenth Malaysia Plan (2011–15) (Malaysia 2010) includes reference to a climate change policy and a green technology policy:

The National Climate Change Policy and the National Green Technology Policy were adopted in 2009 to address the pressing issue of climate change. Through these policies, Malaysia aims to implement strategies to move towards a low carbon economy and achieve sustainable development. In addition, a Green Technology Financing Scheme amounting to RM1.5 billion was established to promote green technology. Two major initiatives were launched to ensure sustainable use of forests and their natural resources: the Central Forest Spine project covering 4.3 million hectares in Peninsular Malaysia and the Heart of Borneo project covering 6.0 million hectares in Sabah and Sarawak. The flood mitigation projects in urban areas, such as the SMART tunnel and the Sungai Damansara Package 1, have addressed flooding in these areas (Chapter 2, Tenth Malaysia Plan).

While the above details are noteworthy, the progress does not indicate the extent to which the emissions have been reduced or the details of adaptation or climate-resilient development strategies adopted. These five-year plans still lack implementation details on a low carbon and climate-resilient development future for Malaysia but were noted in the interviews as having potential for integration. One interviewee (DP2) remarked that, “five-year plans are good vehicles for mainstreaming”. The plans were still identified as top-down and, although extensive consultation took place in preparing these plans, the environment and climate change were in a single chapter rather than integrated across sectors. “This should be the goal of the five-year plans to have environment and climate change in every chapter,” remarked an interviewee (FG5).

Integration of the environment into national development planning strategies was a key component of civil society recommendations to the Malaysian government. In particular, a key

civil society organisation, the Environmental Protection Society of Malaysia (EPSM) recommended the following for the Tenth Malaysia Plan:⁴²

- *It would be prudent now for Malaysia to mobilise the political will to mainstream ecological sustainability as the basis for all the five thrusts of the National Mission immediately and especially into the next two five-year development plans, viz. 2011–2015, and 2016–2020, as well as in the annual budgets.*
- *A high level authority (e.g. a cabinet committee and a policy unit at the Prime Minister's Dept.) responsible to work out policy coherence between ministries and government agencies as well as with the three tiers of government. This is to determine integrated policy and institutional changes needed for inter-agency coordination of sustainable development practices.*

The EPU has its own environment section that coordinates with the NRE and other relevant ministries, such as energy, for environmental policy planning and associated budget matters. High-level political will is important for mainstreaming ecological sustainability in Malaysia, according to a recommendation by EPSM to the EPU. As mentioned earlier, the EPU is commencing a detailed Stern-type review on national mitigation and adaptation costing, which will guide policymakers on the financial requirements to implement a low carbon and climate-resilient future in tandem with the Malaysian climate policy announcements in Copenhagen in 2009. Hitherto, the five-year plans, including the tenth Malaysia Plan, lacked any detailed costing on mitigation and adaptation in Malaysia. This was a serious drawback identified in the interviews and emerged as a key barrier to an effective climate action plan.

In terms of new policy developments relevant to climate change, the examples of the climate change policy and green technology policy are highly relevant. The National Policy on Climate Change (2009) is an aspirational and generalised document. It has five overarching principles on development, conservation, coordination, implementation, effective participation and common but differentiated responsibilities, and outlines ten strategic thrusts to achieve CPI across various sectors and national outcomes. The document lacks specificity, and at the time of the research no specific implementation plan had been made by the government describing how it will achieve the various policy objectives and the time frame in which they will be done.

⁴² Submission from EPSM to EPU for the tenth Malaysia Plan (provided to the author).

It addresses policy integration but no specific measures are provided on how integration across sectors and government policy systems will be achieved.

It is important to understand that the EPU prepares the five-year plans, while the Green Technology Policy has been prepared separately by the Ministry of Energy, Green Technology and Water. The extent to which these key institutions and the NRE will collaborate substantively in an integrated framework cannot be assessed at this stage. However, the ongoing institutional silo experience in environmental policy does not bode well for an integrated implementation framework. It is premature to comment on how this policy will impact on Malaysia's drive towards a low carbon and climate-resilient future as many associated structures and processes will need to be aligned to make this happen.

The announcement of a voluntary 40% reduction in carbon intensity by the Malaysian Prime Minister in 2009 outlines a clear role for the NRE in this process. However, it must be noted that this was not arrived at as part of any substantial and formal institutional coordination but in a more ad hoc manner. According to one interviewee (NG2), "The Prime Minister sent a message to negotiators to come up with a number for the Copenhagen COP and the number given to the Prime Minister was 20%, which the Prime Minister raised to 40%, with the provision of finance and technology". It is also not clear how the carbon intensity reduction process is linked to the Green Technology Policy. How does the Green Technology Policy help achieve not only the development of green technology but also achieve necessary emissions reductions announced by the Prime Minister? This requires effective engagement of the NRE in the implementation mechanism of the Green Technology Policy. To what extent this substantive engagement will happen cannot be commented on at this stage, as the government is currently discussing implementation details. The Malaysian announcement of voluntary reductions is conditional on financial support from developed countries, but according to civil society interviewees, this reduction needs to be articulated into national planning mechanisms. According to one interviewee (NG2), "unless this carbon intensity reduction finds its way in the national planning documents, there is no way this can be achieved"

In addition to institutionalising the policy pronouncements on climate change into effective delivery mechanisms, the relationship among institutions also emerged strongly in the interviews. Many interviewees felt that the relationship between institutions is superficial and

so one needs to wait with caution to see results from aspirational documents, such as the Green Technology Policy. One interviewee (RO4) remarked on the Green Technology Policy:

... the political will of the Prime Minister is there ... need to put this policy into operation before the interest is gone.

5.1.5 Growth

East Asian countries have achieved high levels of economic and human development with a strong role of the state. Malaysia is not included in the list of East Asian Tigers (South Korea, Taiwan, Hong Kong and Singapore) but has a history of high economic development with an active role of the state. Vincent & Rozali (2005), while stressing that Malaysia is one of the most resource-rich countries of the world, found Malaysia's development to be more similar to the rest of the developing world than to the East Asian Tigers. In particular, they highlight the role of the New Economic Policy that has led to rapid economic expansion in Malaysia.

In addition, Malaysia's strong and sustained growth has made a positive contribution towards poverty reduction, socio-economic development and the provision of basic needs including access to energy services (UNDP 2007a). It is important to understand and appreciate the significance and context of the core goal of high levels of economic development for Malaysian climate and sustainable development policy. This policy approach, on achieving high levels of economic development, has had an effect on environmental issues in Malaysia with serious pollution problems in industrialised and urbanised areas (Sani 1993; Vincent & Rozali 2005). The pursuit of economic growth for poverty eradication and socio-economic development is the overriding priority for the government.

The tenth Malaysia Plan highlights that in order to achieve a high-income status by 2020, Malaysia requires a GDP growth rate of 6% per annum during the tenth plan period. While government interviewees highlighted the role of development in economic planning in Malaysia, civil society interviewees were concerned by what they identified as "*an obsession with economic growth*" as a barrier to addressing sustainable development.

At the time of the research, there was an increased attention to a 'green economy' or green growth with a strong focus on green technology to drive the next phase of economic growth and sustainable development (Ministry of Energy 2009). To what extent this increased interest will last is unclear at this stage. As an emerging economy, interviewees identified that it is

sensible to use climate change as an opportunity rather than a threat to the economy, given Malaysia's geographical location and economic and political focus. One civil society interviewee remarked that Malaysia does not experience extreme weather events to the same extent as other South-East Asian nations, such as Thailand, the Philippines and Vietnam, and so climate adaptation is less evident in policy debate in the country (NG1). Since the tenth plan period has just started and the Green Technology Policy is a recent phenomenon, it is premature to comment on how the two ambitions, high income and a green technology drive, combine to achieve the objectives of climate change and sustainable development in Malaysia.

Despite environmental deterioration in many developing and developed countries, the wider mainstream and interdisciplinary economic literature recognises growth as an important component for alleviating poverty and raising living standards in countries (Weizsacker et al. 2009; Collier 2010). Economists such as Amartya Sen have added the concept of human development and capability to form a more holistic approach to growth and development (Sen 1999). The concept of sustainable development recognises economic development as an essential pillar. Furthermore, there is a great deal of political economy literature on development, industrial policy and globalisation that provides details and examples from countries that have not adopted the traditional 'Washington consensus' model and have pursued economic liberalisation and growth strategies with an active role for the state (Amsden 2001; Stiglitz 2002; Wade 2004; Frieden 2006; Amsden 2007; Greig et al. 2007; Rodrik 2007; Stiglitz 2007; Chang 2008).

This research does not explore the political economy questions relating to growth strategies any further. What is important for this research is effective models from other mainstreaming experiences that can be used for CPI. In Malaysia, it became evident through the interviews and the survey of literature that Malaysia's experience in growth and development provides an effective model for replication in CPI. According to one interviewee (RO1), "Malaysia brought different institutions together with the objective of a single agenda – economic growth and if this can be repeated for climate change, we can see similar results". Strong central planning for growth and achievement of social aspirations, requiring vigorous and coordinated policy formulation and implementation, is a successful example for policymakers in Malaysia to be readily used for CPI. Additionally, Vincent & Ali (2005) in their study on resource economics and development established that Malaysia have monitored environmental pollution problems since the early days of industrialisation. This provides

Malaysia with a strong opportunity to use this policy capacity, knowledge and technology base on the environment to further CPI.

5.1.6 Global multilateral process

Multilateral processes under the UN system were identified in the interviews as both a driver and a barrier in Malaysian national climate change response. While it was helping to drive new developments, such as climate change policy, the global process was also slowing Malaysia's climate policy action, given the perceived weak and inadequate response of developed countries on climate change. This is also evident from the submissions of mitigation commitments and actions of developed countries under the Copenhagen Accord to the UNFCCC. There is also a level of distrust among policymakers in Malaysia of the intention of developed countries on the rise of emerging economies and this slows their own low carbon ambitions and plans.

Multilateral processes have not just been a barrier, they have also been an opportunity for Malaysia to actively participate and lead concerns of developing countries. Malaysia has played a wider role and contribution in the UN system. It was the first chair of the Commission on Sustainable Development in 1993; chair of G-77/China in 1989⁴³ and drafted the Langkawi Declaration on Environment and Development in 1989 (Hezri & Nordin Hasan 2006). According to Vincent (2005:26):

The country increasingly played a leadership role with regard to international environmental issues, actively participating in the negotiations on Convention on Climate Change and Biodiversity and the 1992 United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro

The issue of timing and increased response on climate change is a relatively new phenomenon in Malaysia with more active high-level political interest since 2007 (Mokhtar 2010). One interviewee (NG1) remarked that, "climate change did not pick up until 2007 ... was a very low priority until then". However, this remark has to be balanced with the progress on designing two climate-relevant policies, the climate change policy and the green technology policy, in Malaysia over the past few years. This increase in political awareness and national policy moves also coincides with the speed with which the global process moved following the

⁴³ <http://www.g77.org/doc/presiding.html> (accessed 16/3/2011).

adoption of Bali Action Plan in Indonesia in 2007. To what extent these policy moves can be tailored to effective climate action will only become apparent over time. According to one interviewee (NG1), the link between global participation and national level is weak and he pointed out that “there is a very weak or at times no connection between national and international positions taken”.

The scientific consensus on climate change is becoming stronger and confirms the massive human interference in the Earth’s climate system (IPCC 2007b; Hansen 2009; Rockström et al. 2009). However, the global policy response from countries, and in particular advanced countries, is slow. In a recent study from the UN, it is suggested that the mitigation pledges announced under the Copenhagen Accord may not limit temperature increase to 2°C or below this century and the actual increase would depend on the level of ambition pursued within nations (UNEP 2010). The voluntary mitigation pledge announced by Malaysia in Copenhagen has so far not made it to a national planning document, which can measure the extent of its commitment to the international pledge. This voluntary pledge was mentioned in Malaysia’s Second National Communication and so the seriousness of government’s resolve has been indicated. However, it will be important for Malaysia to move further on this pledge and prepare an action plan in tandem with its objectives on green technology and for developed countries to provide the necessary financial assistance provided for under the UNFCCC.

5.1.7 Other issues

Two other related issues emerged from the interviews, one on finance and the other on civil society engagement. An interesting contrast was found among the interviewees, with civil society interviewees saying that finance was not an issue for Malaysia, while government representatives stated that it was. A connection with international climate finance was drawn, given the commitment of developed countries under the convention. According to one interviewee (DPI):

Finance is not a barrier, development budget is available, how they will achieve the objectives of climate change policy are unclear.

This remains a debatable issue and can only be ascertained after the detailed study by the EPU on climate costs is completed. Only after the estimates are available and the budgetary revenues have been analysed can an affirmative statement on the financing capacity be made.

Furthermore, as a developing country, Malaysia is legally entitled under the UNFCCC to receive funding from advanced countries for both mitigation and adaptation.

In particular, the example from the forestry sector is insightful, identified in the interviews as an area in which capacity has been built in Malaysia. Malaysia is a large exporter of tropical timber, natural rubber and palm oil, so the forestry sector is an important resource organ of the government. According to one interviewee (RO3):

It took fifteen years to develop and show compliance with the sustainable forest management practices in Malaysia.

In his view, this development required strong government commitment, sustained policy effort and significant funding to make sustainable forest management a practical reality in Malaysia. To achieve similar results on climate change will require time and funding.

Civil society has played a prominent role in sustainable development policies and has built its own capacity over the past few decades in Malaysia (Sonnenfeld & Mol 2006; Mokhtar 2010). The Malaysian Climate Change Group (MCCG) was formed in 1992 by a consortium of non-governmental organisations⁴⁴, including the Center for Environment, Technology and Development (CETDEM), Environmental Protection Society of Malaysia (EPSM), Malaysian Nature Society (MNS) and Perak Consumers Association (PCA; added to the group in 2002). The groups work together on environmental and conservation issues, and with the government and wider international partners on climate change action in Malaysia and globally. The purpose of this stakeholder initiative was also to educate Malaysian citizens on the need to reduce GHG emissions.

An interviewee (NG2) remarked that the civil society's role and contribution has been constrained due to the *Official Secrets Act*. Civil society has been consulted by the government on various policies, but a final draft on policies is not shared with the stakeholders before submission to the government. Civil society welcomes the opportunity to engage but does not seem to know how their contribution is informing the policy discussions. The engagement with civil society has commenced but the feedback loop seems to be missing and it would be prudent for the government to more fully engage civil society at all stages of policy

⁴⁴ Source: interviews and http://cetdem.org.my/wordpress/?page_id=9 (accessed 16/3/2011).

development, so that they remain confident that whatever they contribute is considered seriously in the policy domain.

5.2 Conclusion

This chapter has raised a number of issues that arise when CPI is analysed at the national scale. This chapter has highlighted that incremental progress is being made in enabling CPI across various structures and processes of the government in Malaysia. The next chapter analyses the empirical findings from the two case study countries, Malaysia and Pakistan, and draws on the literature outlined in Chapter 2 to provide a comparative analysis of the two countries.

Chapter 6: Analysis and synthesis⁴⁵

6.1 Introduction

The previous chapters established the context for undertaking CPI within the ambit of sustainable development in both theory and practice. They provided case studies of two developing countries, Pakistan and Malaysia, to demonstrate the experiences of these countries in CPI at the national scale. This chapter undertakes a synthesis of the results from the two case study countries using the framework of EPI and CPI (Chapter 2). The structures and processes identified in the case study chapters are now investigated against principles of CPI to identify:

1. where the literature is deficient in the developing world context
2. the differences that exist between developing countries in their efforts to achieve CPI
3. additional processes and mechanisms, based on the case studies, that enable CPI above and beyond those evident in the literature.

6.2 Revisiting EPI and CPI as a theoretical framework

Climate change is a classic sustainable development problem and invites attention to policy integration to embed climate not only in sectoral decision-making but also in wider public policy and administrative systems (i.e. the structures and processes of government). The case for greater attention to be paid to the structures and processes at the national level that help to mainstream climate policy within the decision-making process has been made in Chapter 2. Policy and administrative structures and processes have been identified as one of the key elements for helping a whole-of-government response to climate change. This thesis has argued that structures and processes are a central part of a comprehensive response to climate change and could serve as a useful means to achieve CPI. Structures and processes are part of a method process of engendering CPI and not an output in themselves. Drawing on

⁴⁵ This chapter is an updated and expanded version of a conference paper entitled 'Embedding climate change in national institutions: insights from Pakistan and Malaysia' presented at the 2nd UNITAR-Yale Conference on Environmental Governance and Democracy, 17–19 September, 2010, New Haven, USA.

literature from EPI, this thesis has identified the kinds of structures and processes relevant to CPI. The empirical results in Chapters 4 and 5 have further identified the key themes emerging from the case study investigation and literature relevant to the developing countries.

This section begins by revisiting the definitions of EPI and CPI and, the principles and barriers to EPI and CPI identified in Chapter 2, to lay the groundwork for the subsequent synthesis of CPI observed in Pakistan and Malaysia (Chapters 3, 4 and 5).

6.2.1 Defining EPI and CPI

Environmental policy integration has a well-developed literature (see Chapter 2) and there is general agreement as to what constitutes EPI in the predominantly European-based literature. There are divergent views on implementation of EPI: views that see the environment as a principled priority (Lafferty & Hovden 2003) contrast with other views of EPI as a sustainable development issue (Lenschow 2002). The empirical findings from the research support the notion of sustainable development as a useful framework for implementing EPI in developing countries (Chapter 2).

Climate policy integration, on the other hand, is an emerging topic that is trying to fit into the mainstream *problematique*. Climate policy integration has largely concentrated on mitigation, and adaptation has only recently started to appear in the literature and policy discourse on CPI (Urwin & Jordan 2008). Both CPI and EPI have a short history and have experienced somewhat parallel development since 1992, with their formal origins tracing back to Agenda 21 (United Nations 1992). This historical characterisation owes its nomenclature to the understanding of the concepts of EPI and CPI presented in this thesis. Climate policy integration owes further allegiance to the United Nations Framework Convention on Climate Change (UNFCCC) and the associated policy arrangements that emerged or are associated with UNFCCC at the global and national level. The mechanisms and processes include: reporting, particularly national communication; financial mechanisms, such as the Global Environment Facility; science-based institutions, such as the IPCC; and relevant authorities on climate change at the national scale, such as climate change focal points and task forces on climate change.

Climate policy integration has been a new phrase in the policy and scholarly discourse on policy integration (Urwin & Jordan 2008; Ahmad 2009; Mickwitz et al. 2009; Jordan & Lenschow 2010). Lafferty & Hovden (2003, p. 9), define EPI as:

- *The incorporation of environmental objectives into all stages of policymaking in non-environmental policy sectors, with a specific recognition of this goal as a guiding principle for the planning and execution of policy.*
- *Being accompanied by an attempt to aggregate presumed environmental consequences into an overall evaluation of policy, and a commitment to minimise contradictions between environment and sectoral policies by giving priority to the former over the latter.*

Lafferty & Hovden's (2003) characterisation of EPI as a principled priority in decision-making has an established presence in academic literature; however, results from its application on empirical investigation in developed countries, and particularly the pioneer founder EPI countries from Europe, is patchy and demonstrates that such principled consideration has not taken place fully in these countries (Lafferty & Hovden 2003; Nilsson 2007; Jordan & Lenschow 2008; Jordan & Lenschow 2010). This implies that even in developed countries, allocating a principled priority to the environment in decision-making is contested. Application of this principle in developing countries becomes more challenging, where the major priorities are development, poverty eradication and raising living standards. Jordan & Lenschow (2008, p. 338) sum this up:

The notion that environment should enjoy a principled priority has remained stuck in abstract academic discourse. Politically speaking, in everyday governance processes, sustainable development is more frequently read as prioritising economic development, while 'taking into account' environmental objectives and searching for synergetic effects.

A definition of CPI can be constructed replacing climate with environment:

- The incorporation of climate change response objectives into all stages of policymaking in non-climate policy sectors, with a specific recognition of this goal as a guiding principle for the planning and execution of policy.
- Being accompanied by an attempt to aggregate presumed climate consequences into an overall evaluation of policy, and a commitment to minimise contradictions between climate and sectoral policies by giving priority to the former over the latter.

Given the scale and scope of the climate challenge, this simple replacement brings significant difficulties in implementing climate policy as an integrated activity, as we saw in Chapter 2 and in the empirical results in Chapters 4 and 5. Climate policy integration has been recognised as a

subset of the much wider principle of EPI (Nilsson & Nilsson 2005; Urwin 2008; Urwin & Jordan 2008). This simple replacement of environment with climate does not address development, which is the highest priority for developing countries. However, the above definition of CPI provides a useful starting point for introducing climate into policy discussions and, in the case of developing countries, dovetailing this with development strategies. This definitional transposition was considered sufficient for this thesis and a new definition simply for the sake of being different is unwarranted and unnecessary (Chapter 1 and 2). The main distinction of EPI and especially CPI is that the implications are spread further across sectors than many other policy concerns.

6.2.2 Principles and barriers

As was made evident in Chapter 2 and in the empirical results in Chapters 3, 4 and 5, one of the principal barriers in applying the EPI literature to CPI in the developing world has been the predominant concentration of the former on developed countries, making its application to developing countries, especially lower-income countries, much harder and more challenging. Furthermore, the EPI literature has paid little attention to climate change, so using EPI as a framework poses challenges, as most of the academic and grey literature in developing countries draws on EPI. However, as pointed out in Chapter 2 the theory and practice of EPI is both a mildly positive example and the only available analogue for CPI. Some notable exceptions have been found in some developed countries, such as Germany, where climate change has been a key instrument in enabling EPI (Wurzel 2008). While the EPI literature has not focussed on climate change, in some countries climate change has enabled EPI.

The CPI literature, on the other hand, is an emerging topic of scholarly discourse on developing countries, while the focus of EPI literature still remains primarily on developed countries. The relevant coverage and focus of EPI and CPI provide interesting insights: the EPI literature, with a strong focus on the environment, focuses largely on issues such as air pollution, agriculture, energy, fisheries and environment impact assessment; while CPI, with a predominant focus on climate, miss the comprehensive elements of sustainable development (i.e. social, economic and environmental elements that are so critical for all countries), and developing countries in particular. This focus does not seem to be at the expense of social and economic issues but does indicate some preference and prioritisation of the environment and climate over developmental issues, with contrasting views as indicated above and in Chapter 2.

The emerging CPI discourse is concentrated on sectors including energy, agriculture, forestry and transport and responds to dealing with either the symptoms (adaptation) or prevention (mitigation) of climate change. This sector and issue-based approach, while important and useful, does not provide a comprehensive exploration of a whole-of-government response on climate change. The emerging CPI literature presents a weaker and limited study of the public policymaking processes at the national scale, missing out on a unique set of important contributors in driving a whole-of-government response on climate change.

As pointed out in Chapter 2, the case for mainstreaming or integration across sectors has largely been made in the literature, but the evidence base on implementation at national scales is weak. A principal contribution of this research is to provide an empirical exploratory investigation of two developing countries on CPI at the national scale. As explained in Chapter 1, this empirical research, while timely and purposeful, has faced significant challenges in working with a limited literature and limited data, particularly on structures and processes. This research thus provides a major contribution to the sparse literature on CPI with detailed coverage of structures and processes relevant to CPI at the national scale.

The next section is a synthesis of the findings from the two countries (Chapters 4 and 5), comparing their strengths and weaknesses in regards to CPI. It will not be an evaluation of the extent of CPI in the two developing countries. Given the gestation phase of CPI literature and policy practice on climate change in both countries, this is neither possible nor desirable at this stage. Instead, it will be an exploratory analysis testing and feeding the weak CPI literature with the similarities and differences on CPI emanating from the two developing countries.

6.3 *CPI in the developing world: a synthesis*

As evident from Chapters 3, 4 and 5, Pakistan and Malaysia are two interesting developing countries to explore for CPI as both have: dominant federal systems; a somewhat similar bureaucratic and political culture; a development and growth focus; a strong contribution of energy to the GHG emissions profile and a track record of leadership positions in international environmental and climate negotiations. The contrasts are equally interesting: a developing economy (Pakistan) versus an emerging economy (Malaysia), with wide differences in per capita income; an economy with a dominant share of agriculture (Pakistan) versus an economy with a predominant share of manufacturing (Malaysia); a country with low per capita emissions (Pakistan) versus a country with higher per capita emissions (Malaysia); and, a

country facing increasing climate risks (Pakistan) versus a country that has not faced many extreme climate impacts (Malaysia). These generic differences have influenced the resultant policy response to climate change in the two countries (see Chapters 3, 4 and 5) and reflect the ensuing similarities and differences on climate and development policy and the resultant structures and processes engendered in the two countries.

The section begins by recapping the themes identified in Chapters 4 and 5 and then provides a synthesis in light of the theoretical underpinnings outlined in Chapter 2.

6.4 *Synthesising the key themes from the empirical work*

The empirical results from this thesis (Chapters 3, 4 and 5) clearly suggest that there is movement towards CPI in Pakistan and Malaysia – albeit slow, incremental and *ad hoc*. The climate, environment and development context in the two developing countries is different from developed countries, as one would expect, but the results on CPI in Pakistan and Malaysia show similar trends. In fact, they corroborate some of the findings of the barriers, opportunities and key success factors identified in relevant literature and studies on Malaysia, Pakistan, Australia and Europe (Yamin 2005; Hunnam et al. 2007; Jordan & Lenschow 2008; Ross & Dovers 2008; Hezri & Dovers 2011) mentioned in Chapters 4 and 5. This trend is particularly insightful as developing countries have, in some ways, less experience of implementing climate and environmental policy than developed countries. This research does not aim to compare developing and developed countries; however, an indication that the barriers, challenges and opportunities show some signs of similarities, even in different contexts, is worth noting and points to possibilities for further research and policy attention.

Drawing on the theoretical underpinnings of EPI, CPI and the wider climate change and sustainable development literature (Chapter 2), the sections below present an analysis of the themes emerging from the empirical studies of Malaysia and Pakistan.

6.4.1 Information, reporting and research

In determining adaptive and mitigative capacities, one of the essential elements identified in the literature is the central position of information, which is linked strongly to research and reporting (see Chapter 2). In Pakistan and Malaysia, the need for information generation, distribution and sharing emerged as a major theme from the empirical work. In Pakistan, weak individual and institutional research capacity on climate change, providing little and dated

substantive information on climate change, emerged strongly, influenced by the culture and position of researchers and research institutes in the wider system of governance. In Malaysia, limited information access and flow on climate change and sustainable development was a major barrier in effective and informed civil society participation in climate-related decision-making. This research proposes information as a crucial element in CPI: if different agencies do not have shared information they cannot coordinate effectively.

Both countries exhibited limited signs of integrating national and international reporting needs on climate change, relying heavily on consultants. The structures and processes generated for producing national communication reports for the UNFCCC were not institutionalised to fully inform and link the national and international reporting in a more permanent manner. In other words, while the human resources used were similar (e.g. staff, experts, task forces and working groups), the outputs in the form of national communication and national reporting (such as five-year plans) remained two separate processes that were not directly connected. Connecting these processes is not part of any mandatory international requirement, but doing so would create greater efficiency and coherence at the national scale. For instance, both countries have undertaken work on mitigation assessment and inventory needs as part of the national communication; yet how much of that information flows into other processes of government, such as five-year plans and sectoral plans, is not clear, as there is no formal process linking such information.

In terms of making effective climate policy decisions, the information base becomes very important and is dependent on substantive details on climate change, particularly on the costs of mitigation and adaptation at national levels. There is little substantive information on adaptation and mitigation costing in both countries, providing finance ministries and other key decision-makers in Pakistan and Malaysia with a weak information base to support climate change activities. This limits their ability to make effective choices and decide whether they should support building adaptive or mitigative capacity or both (Chapter 2). In both countries, a realisation that this is a key missing resource was observed and efforts are underway to move in that direction in both countries. This is not just confined to Pakistan and Malaysia, but is largely the case in most countries, with some multilateral international organisations, such as the World Bank, Asian Development Bank and UNFCCC, making efforts in this direction (see Chapters 4 and 5).

6.4.2 Institutional silos

There appeared to be increased awareness of climate change, particularly within various ministries of both governments. However, the empirical results indicate that they are still largely working in silos, despite incremental steps towards a broader approach to climate change in Pakistan and Malaysia. There was a gap between the high-level political interest on climate change in Malaysia and a slow administrative response to climate change. Climate policy development has occurred in Malaysia, and key agencies are becoming sensitised to climate change. However, there is a clear disconnect between the high-level political priority accorded to climate change in both countries and the slow rate of agency response and implementation (Ahmad & Dovers 2010).

In Malaysia, policy integration emerged as 'difficult', given the need for energy security and the political power of the energy industries. In Pakistan, individual ministries were focussed on their own sectoral portfolios rather than the interests of an integrated climate change approach. It is interesting to note that these findings are also reflected in the experiences of developed countries, such as Germany. For instance, Wurzel (2008) suggests that, contrary to their original mandate, the mirror units on the environment in different ministries (1974–98) were meant to keep environmental activities in check rather than to further integration. Environmental policy integration was only undertaken, albeit reluctantly, after 1998, with involvement of green political movements and parties driving this change (Wurzel 2008).

As argued by Howlett & Ramesh (2003), political interest and administrative practice in countries have a key role to play in driving any decisions, and gaps between these leads to policy failure. In the case of both Pakistan and Malaysia, the political interest in and general awareness of climate change has increased. However, this increased awareness did not result in more institutionalised responses to climate change, as agencies were still acting within their separate interests and mandates. The institutional link between various ministries was more cosmetic and superficial. For example, the relationship between ministries dealing with energy issues and environmental matters was more procedural in nature, rather than being based on substantively incorporating environmental and climate interests in decisions on energy policy.

Ongoing collaboration between various structures and processes of the government tended to be weak. In Pakistan, officials from the Ministry of Finance were missing from many important climate committees of government, leading to weak policy and public finance outcomes. In

Malaysia, this has been addressed through a larger role of the EPU in climate decision-making. For instance, the Stern-type review on climate costing is to be done by EPU, which demonstrates some evidence of CPI, as EPU is the lead economic planning agency. The practice in developed countries, such as the UK and Australia, has been that such reviews are conducted independent of the government. To what extent these reviews would be credible and accurate if carried out by the government cannot be commented on or analysed at this stage; however, it is to be noted that, with an early stage of CPI, it is expected that governments will supervise or be involved in such assessments, as has been done for other climate and environmental assessments in developing countries. A culture of independent evaluation is only starting to appear in developing countries.

This research confirms that institutional silos act as a barrier to CPI; however, in the case studies this has moved the issue to a finer resolution to indicate greater detail and specificity of policy processes and administrative possibilities.

6.4.3 Role of the MOE and the NRE

Pakistan and Malaysia exhibited clear signs of a weak, patchy and *ad hoc* role of their lead agency (i.e. the MOE in Pakistan and the NRE in Malaysia) in coordinating climate change decision making across the government systems. The fundamental macro reasons included: the fact that neither of the lead agencies, MOE and NRE, is a revenue generating ministry within the government; the dominance of development and growth issues in decision-making to eradicate poverty and raise living standards; and, having a limited role in any major initiative of the government (e.g. the energy and green economy drive in Malaysia). In Pakistan, these were further complicated at the MOE by frequent staff changes, shifting of climate change responsibilities and limited human capacity on climate change.

The NRE and the MOE showed incremental signs of making progress on drafting climate policies, with Malaysia finalising one in 2009 and Pakistan expected to do so in 2011. This is a positive development; however, evidence from Malaysia and previous experience on environmental policies in Pakistan show that the policies are generally aspirational and lack substantive depth or an effective action plan. Creating a policy enables learning and increases awareness on climate change within the policymaking community, which needs to be followed up with an effective implementation plan and arrangements.

This is where the deficiencies are most noteworthy in the two countries, where the bureaucrats in the MOE and the NRE have not substantively picked up on the increased awareness of government to advance climate change and use their functions strategically. Creating a climate policy has come out as a stand-alone achievement in Pakistan and Malaysia; whether such promising creations lead to low carbon and climate-resilient development is another question and cannot be ascertained at this stage. The detailed action plans on the implementation of climate change policies are under preparation in both countries, so it is too early to make any definitive conclusions.

National concerns of energy security and pushing green technology in Malaysia, and energy access, vulnerability and adaptation concerns in Pakistan, have climate underpinnings and both ministries have important leverage through which they can articulate strategic interventions on climate change across the government systems. Notwithstanding the constraints of resources and even with their limited powers and capacity, the NRE and the MOE could still make use of their role to advance greater whole-of-government cooperation on climate change.

Policy integration is a challenging task in any country and in any sector; the literature is full of examples from other mainstreaming or cross-cutting issues, such as gender and human rights (True 2001; Schech & Mustafa 2010). In countries that run under dominating federal systems with strong power and prestige of civil servants, engendering any substantive action that is not part of the mainstream economic thinking is bound to face difficulties, as was demonstrated in Pakistan and Malaysia. This is no different from the difficulties faced by such ministries and climate change and environment decision-makers in developed countries (Jordan 2008; Ross & Dovers 2008; Mickwitz et al. 2009).

However, in both Pakistan and Malaysia, the MOE and the NRE have demonstrated success in other environmental endeavours: operational success of the Montreal Protocol in Malaysia and development of an environmental legislation and creation of a national conservation strategy in Pakistan represent substantial achievements by these ministries. What is relevant in this discussion is that in both of these previous cases the NRE and the MOE made an excellent utilisation of stakeholders and generated policy space, to developing the phase-out of ozone depleting substances in the case of the Montreal Protocol and developing the key environmental legislation and environmental policy document in Pakistan.

In the case of the Montreal Protocol, global funding was a definite advantage and a major contributor, but this needed to be matched with an effective national implementation arrangement to make this happen. The empirical work showed that this was a useful example for the NRE to learn from. It will be important for NRE and MOE officials to take lessons from the success of such efforts to enact an effective institutional response to climate change. Weak finance and insufficient capacity is not a sufficient reason not to utilize the existing strengths of the NRE and the MOE. The NRE and the MOE (or the new lead environment structure in Pakistan) need to work with the current strengths to accelerate climate action and CPI in general. Improving capacity and finances is part of a long-term goal that needs to work with the current capacity and institutional arrangements.

In Pakistan, due to the constitutional changes, the majority of functions of the MOE have been devolved to the provinces with effect from 1 July 2011 and functions relating to climate change have been transferred to the Planning Commission. The demise of the MOE is not necessarily negative for climate policy but in fact could be a very positive development for CPI. There is now a renewed opportunity for the Planning Commission, which has a greater role in the policy formulation process, to integrate climate in development decision-making and engender an effective CPI approach. The extent to which this can or will happen cannot be foreseen at this stage. The next section provides greater detail on the role of national planning and planning commission type structures in the two countries, and what this could mean for CPI.

This research exposes the EPI issue in developed countries, of the typical constrained ability of a generally junior environment portfolio to drive integration across sectors. However, the case studies indicate strategies to ameliorate this (see also the following section). A more open question is how to ensure that higher-level political interest in climate change can be translated more effectively into action within the policy system.

6.4.4 Role of the Planning Commission and national planning

In Pakistan and Malaysia, the Planning Commission and the Economic Planning Unit respectively have important roles in national economic decision-making and in preparation of long-term plans. They have demonstrated their major roles in articulation of climate and environmental policies and plans by their central position in the bureaucracy, with the EPU directly under the Prime Minister's office. In Malaysia, the EPU is expected to lead the first Stern-type review in the country and authors the five-year plans. In Pakistan, the Planning

Commission, as the new administrative organ for handling the subject of climate change, its previous experience in serving the important Task Force on Climate Change, and also in preparing the five-year development plans, is uniquely positioned to serve this role. Once again, how it performs this role in Pakistan cannot be assessed at this early stage.

The gestating nature of the contribution of the five-year plans and institutional structures in promoting a whole-of-government response on climate change became evident in the empirical work (Chapters 4 and 5). While there were no glaring turf wars between the ministries on the subject of climate change, the central position of the planning machinery and how they viewed economic development as the sole driver for national decision-making became apparent. Climate change was one of the factors to be dealt with under the development framework and its position was secondary to other development goals, so in essence mainstreaming has only just begun. This low rating of mainstreaming is driven by the structures and processes within the planning machinery and the contribution of climate change in such measures.

For example, it was apparent in both Malaysia and Pakistan that the environment or climate change is part of a single chapter in the planning framework rather than integrated in each of the sector chapters on energy, economics and agriculture etc. This was not a fully mainstreamed approach to climate change and weakened the ability of the planners to substantially develop a comprehensive low carbon and climate-resilient development model.

The structures and processes relevant to climate change, such as national communication and climate change policy, originated in the NRE and the MOE. What became evident from the empirical work was that such processes had a weak impact on the national decision-making structures and processes, such as five-year plans. It was not clear to what extent they were utilising the information that was generated in national communications, which is a major repository of information on GHG inventories, mitigation, vulnerabilities and adaptation. It appeared that the two processes were running in parallel, without much integration or coordination. Crucial to the success of central agencies in implementing CPI will be the close links to agencies such as the NRE and the MOE, and a sufficient quality information base to inform and justify policy change (see above).

6.4.5 Global multilateral processes

Pakistan and Malaysia have both at times taken leadership roles in multilateral environmental diplomacy (Chapters 4 and 5). This international participation has led both countries to advance climate action at home and helped in capacity building; however, in some sense, it has also weakened domestic response, due to concentration on the problem of inadequate attention given to climate change mitigation and provision of finance by developed countries. While provision of finance by developed countries and lead mitigation action is a mandate for developed countries, a proactive concentration on these aspects in some ways takes away crucial time of policymakers for national implementation in the two countries. This research does not go into further details on the contribution of finance and mitigation, for which there is a large body of literature (Kerkhoff 2011).

In both countries, civil society has been a key player in generating not only the international response but also in raising awareness on climate change. In the case of Pakistan, the process of international meetings and participation has also taken away crucial time for national implementers to spend on climate change action at home due to limited staff working on climate change. This was not evident in Malaysia, but the international meetings did take time away for UNFCCC focal points in the NRE. The negotiation burden for participation in international meetings is a general concern for all developing countries. In a recent study on the negotiation burden of environmental agreements that studied ten key multilateral environmental agreements (MEAs) Munoz et al 2009: 1) state:

The negotiation burden has been particularly heavy for developing countries, which often have the fewest resources and weakest capacity. This has led to what some have described as a sense of negotiation fatigue because of an expanded and unwieldy negotiation load.

In terms of CPI, what is relevant in this context is that the international processes and meetings are demanding considerable time from the governments, and countries such as Pakistan seem to be struggling with apportioning the right amount of time between national action and global participation.

In view of the above points, three major issues emerge from the global multilateral process relevant to Pakistan and Malaysia:

- Aggressive international participation has helped both countries to increase climate change awareness.
- A focus on the broader political issue of inadequate climate mitigation in developed countries and provision of finance to developing countries has slowed the development of a low carbon and climate-resilient response at the national level.
- Civil society has been a key part of the global process in both countries.

This research exposes key features of the global climate and environmental processes that are having an effect on CPI at national scales. A major issue is how to ensure that the synergies between the two levels can be effectively engendered to promote CPI at the national scale. Opportunities for enhancing climate change awareness, greater capacity building and involvement of civil society are some of the positive outcomes of the collaboration between global and national scales, while the burdensome nature of the global process and the weak action on mitigation and finance by developed countries are retarding factors for CPI in developing countries, as has been seen in the case studies.

Positive externalities

Incorporating climate or the environment in national policy and decision-making is a difficult process for any country, and developing countries in particular. This is particularly challenging because there are less influential green political movements or parties in developing countries. Green parties or movements have been recognised in the literature as a strong force for advancing environmental issues in the national policy space of developed countries (Dryzek 2005). Though there is a presence of civil society in Pakistan and Malaysia, the countries lack mainstream green parties to promote environmental issues. As a consequence, the promotion of environmental and climate change goals is largely limited to the government and to a lesser extent civil society organisations, who deal with other environmental and developmental challenges, not just climate. It therefore follows that if there was a single party or influential NGO with such green credentials in Malaysia or Pakistan that strongly advocated environment or climate mainstreaming, CPI may have been more successful. The NGOs have been successful in Pakistan and Malaysia to the extent of identifying or creating environmental and climate policies, but they have been weak in influencing advancing CPI or EPI as a whole-of-government activity.

However, what could drive future climate action are two important pillars on climate and economy (one on prevention and another on symptoms of climate change): a green economy drive in Malaysia and climate vulnerability in Pakistan. Malaysia has recently announced a voluntary carbon emissions reduction of 40% from 2005 levels by 2020 and Pakistan experienced the worst climate disaster in decades in 2010 and is responding with enhanced disaster policy and mechanisms. Both these processes in the two countries could generate suitable mitigation and adaptation responses. In Pakistan, this has already led to the creation of a new disaster management agency; in Malaysia the voluntary reduction announcement was preceded by a green technology policy. The main drivers for the Green Technology Policy are economic and not climate related, but it could help Malaysia lead to a low carbon path if the policy is mainstreamed with the climate change goals of the government.

Civil society, researchers and other relevant climate stakeholders in Pakistan and Malaysia need to pick up on these issues and influence policymakers. This would be an effective contribution to enable a low carbon and climate-resilient development, and to help engender CPI in the two countries. Identification of potentially synergistic policy goals might be used as a key strategy for CPI.

Broad trends

This research has demonstrated the gestational nature of the CPI efforts in Pakistan and Malaysia, largely depending on high-level political interest in both countries. This research has shown pockets of good practice from where lessons could be drawn. These countries are not the pioneer candidates for a successful CPI; in fact, it would be very difficult to point to any country that could be classified as one. In European countries subject to a proliferation of EPI studies, it has not proved possible to designate one country as an excellent candidate for EPI. For example, Sweden, which has an excellent track record of environmental policy and effective public administration, has been pointed to as a country where EPI occurs only to a certain extent and only under certain circumstances (Nilsson 2007). In another assessment of CPI in the high consumption economies of Europe, a study suggested that despite existence of many CPI features, the GHG emissions of many sectors and countries are increasing (Mickwitz et al. 2009).

This context is important to understand and evaluate the findings from Pakistan and Malaysia, which could both be classified as 'average candidates for CPI', given what has been explored in the countries. The section below provides salient features of CPI trends in both countries.

6.4.6 Salient features of CPI trends in Pakistan and Malaysia

The first observation is that while some of the issues that arise are predictable from a policy integration perspective and often identified in the literature (e.g. silos, question of lead agency), some arise that are less familiar (e.g. the role of information, tension between domestic and international work). Importantly, even familiar issues have important nuances across national contexts, suggesting that there are no uniform models that will apply everywhere. Climate policy development has occurred in both countries, but with very different foci and priorities, especially regarding mitigation versus adaptation. Key agencies are becoming sensitised to climate change. However, there is a clear disconnect between the high-level political priority being increasingly accorded to climate change in both countries, and the slow rate of agency response and implementation.

Mainstreaming or integration is occurring, but incorporation of climate change objectives into all stages of policymaking is still weak. Silos across the policy system are a major issue. The information basis and capacity to develop and justify policy action across sectors is an issue in both countries, but with different emphases. As a process to begin understanding the climate mitigation and adaptation imperatives and costs for each country is only starting to appear, a full aggregate of climate consequences into all aspects of public policy is yet to be made and contradictions between sectoral policies have not been removed.

A major issue is that development remains the overriding goal in both countries, but development and economic policy are yet to fully incorporate climate considerations and any co-benefits or synergies. In terms of responsibility for CPI, in both countries the relevant focal ministry (of environment) is seen as weak, raising the issue of where responsibility is best placed. The more powerful and systemic potential of the national planning process in both countries is recognised, but while climate is being incorporated in these processes it is not embedded yet across sectors. Linking synergistic goals and agencies may be a key opportunity (e.g. green technology and mitigation; disaster policy and adaptation) for CPI.

The EU's experience of integrating climate change into sectoral policies demonstrates that mainstreaming requires *resources, political will and time* in order to achieve results on any

significant scale (Yamin 2005). In Malaysia and Pakistan, resources and political will need to be increased and conditioned for integration to work. On timing, greater stability for sustaining and moulding existing structures and processes on the environment, climate and development policy are required to allow for meaningful integration mechanisms.

In a general sense, Howlett & Ramesh (2003) characterise gaps between legislative intent and administrative practice as a major reason for policy failure. Specifically regarding policy integration, Dovers & Ross (2008) find leadership, long-term embedding of EPI and implementation capacity as prominent success factors and barriers. In both countries, while political will was believed to exist, it did not translate into effective policymaking at national levels. Both points seem to apply to the two countries. However, a key barrier in both countries is the information base. The development and implementation of an integrated, cross-sectoral climate policy is not supported by detailed and updated information on mitigation and adaptation, including associated costs. Without such information, it is difficult to see the range of necessary agencies either identifying the imperative of addressing climate change, or of justifying investment and action, whether directly in programs, or indirectly through the establishment of, and participation in, policy structures and processes dedicated to CPI.

Transferring and comparing lessons

This chapter, and the research in general, has explored CPI at the national scale in Malaysia and Pakistan. As explained in Chapter 2, the case for mainstreaming has been made in the literature and synthesised in the recent assessment of IPCC (2007b). What is missing is evidence and exploration, particularly at national scales. Mainstreaming processes in developing countries have largely been driven by the international climate process (e.g. UNFCCC, and this is in its very early stages) (Mitchell et al. 2006). This was nicely summed up in a recent study by Kok & de Coninck (2007: 597):

Although the opportunities for mainstreaming climate change are increasingly recognised by analysts and (inter)national policies are starting to be formulated, implementation is still in its infancy.

The CPI trends provided in the previous sections and the greater exploration in Chapters 4 and 5 have presented the barriers, challenges and opportunities for CPI in Pakistan and Malaysia. While it was neither a purpose of this research nor possible to do a wider extrapolation from

the trends in the two countries, the brief literature on developing countries does point to some similar trends. For instance, the sixth compilation of initial national communications from parties not included in Annex 1 to the convention point out the following barriers, needs and constraints to the integration of climate change policies and activities into national sustainable development plans and actions (UNFCCC 2005):

- ability to incorporate climate change and other environmental issues into social-economic and/or sectoral plans and in efforts to achieve Millennium Development Goals capacity to mainstream mitigation and adaptation strategies into broader national development
- ability to formulate, analyse and implement integrated strategies and policies
- capacity for coordination and support mechanisms at national and local levels
- ability to assess and plan for mitigation and adaptation and integrated actions
- data collection, processing and management relating to integrated assessment and decision-making
- institutional strengthening and capacity to seek synergy among conventions at the national level.

These identified barriers, needs and constraints in CPI from 122 developing countries show that similar problems exist in these countries and expose issues such as information, research and institutional coordination, among others that were also found in Malaysia and Pakistan. National communication and its synthesis by the UNFCCC secretariat comprise a set of limited data on researching CPI at national scales and the research data from national communication provide an interesting synthesis. The list above is general and does not go into greater detail in terms of how this can be done and the challenges they present, which this research has explored (Chapters 4 and 5). This thesis has identified that countries are different and no universal checklist can be made even for countries classified as developing, as they possess contextual differences that have to be responded to through appropriate policy and mechanisms.

In a more recent study led by the International Institute for Environment and Development (IIED) on the challenges of environmental mainstreaming in a group of largely developing countries, the following key constraints were identified (Dalal-Clayton & Bass 2009):

- *the prevailing development paradigm, which considers the environment as an institutional and economic 'externality'*
- *lack of data, information, skills and institutional capacity to work on environmental development links*
- *weak environmental mainstreaming activities to date to act as a precedent*
- *lack of political will for change.*

These results are particularly interesting as they convey evidence from a diverse group comprising: the Caribbean, Chile, Croatia and the Czech Republic, Ghana, India, Kenya and Uganda, the Philippines and South Africa. It is interesting to note that some of the CPI trends, such as information, research and capacity, which were identified in Malaysia and Pakistan, can be seen in this group of countries as well. Thus, the findings from this thesis are consistent with those from the IIED study, but again this research has taken the questions to a level of policy and administrative detail hitherto little explored.

Bina (2008), in a study comparing the relevance of Europe's EPI concept and practice to China's current situation, concludes that there are three aspects of EPI thinking that seem particularly relevant to China's situation and options:

- *the essence of EPI – the focus on integration into sectors other than the environment sector and the need for leadership as well as leaders*
- *the systemic and continuous nature of EPI process, which would be a radical departure from the current practice that focuses on campaigns, instruments, laws and, increasingly, market mechanisms, but fails to provide a coherent direction*
- *the notion of principled priority that combines with China's weakness – the narrow framing of the environment as a sector, and one still mainly involved in reactive measures – and strength – the clear knowledge of limited resources and priority to protect them, further heightened by the growing awareness of risks linked to climate change.*

This conclusion stems from the Chinese focus on high growth as an essential policy objective, which comes at a high cost to their environment and human health. The emerging economies, such as Malaysia, face similar pressures, due to their focus on economic growth. This high

growth pursuit, if combined with effective EPI could help redirect efforts to sustainable development rather than economic growth alone (Bina 2008).

Turning our attention to the least developing countries, where the immediate pressing issue is adaptation, not mitigation, given their state of development and low level of emissions that have contributed to this level of underdevelopment. In a study on mainstreaming adaptation to climate change in the least developed countries undertaken by IIED, Huq et al. (2003) suggest that mainstreaming adaptation to climate change within the national policy process is weak and it is important to work on the following:

- *information on climate change impacts needs to be translated from the scientific research domain into language and time scales relevant for policymakers*
- *research on potential impacts of climate change needs to be supported in-country to enable information to be improved and passed on to policymakers*
- *all relevant stakeholders need to be involved, but their needs for information may vary and thus information must be suited to the stakeholder group being engaged with*
- *sectoral level policymakers, planners and managers are relatively more likely to mainstream adaptation to climate change into their ongoing and planned work (provided the information on impacts is given to them in a suitable form)*
- *high-level policymakers need to be especially targeted (with suitable material)*
- *national and international experts and researchers need to share their knowledge with people making decisions and plans on grounds more effectively.*

Information, research and national relevance emerge from this research and are consistent with the findings from the above IIED study. What is becoming clear from a synopsis of the limited literature on CPI in the developing world is that many of the challenges and opportunities are similar but they have to be conditioned largely by the national context in order to become a relevant CPI. The broad trends and experiences from other countries should provide some guidance, but the form and breadth of CPI in individual countries should be relevant to the country's national context and circumstances. The two case studies examined here provide strong evidence that the time-scale understanding and design of CPI measures are required in each jurisdiction.

Conclusion

This chapter synthesised the findings from the empirical component of the study. The focus has been on the national policy scale, where evidence is limited and literature is deficient. The next chapter will present the conclusions of the study and a prescription for embedding CPI at national scales.

Chapter 7: Conclusion and policy directions

Using Pakistan and Malaysia as case studies, this thesis has explored CPI as a whole-of-government activity more broadly and at the national scale. A framework for exploring CPI was developed using the EPI literature (Chapter 2). A detailed analysis of structures and processes at the national scale that could enable CPI was undertaken and the problem of a whole-of-government response was highlighted using responses from the policy community in both countries. This research makes a substantive contribution to the field of knowledge on the challenges of CPI at a whole-of-government level within the national context. The existing literature on EPI and CPI is dominated by sector-based analyses, and is largely devoid of a whole-of-government analysis of climate policymaking. This work is grounded by the empirical investigation of CPI at the national scales in Pakistan and Malaysia.

This chapter is not only a summary chapter but also a consolidation of insights from the two case study countries presented in Chapter 6. This is aimed at defining some policy directions for CPI in developing countries more generally and identifying future research opportunities. The thesis has worked with a limited literature and gestating CPI in both countries. However, despite these limitations, this thesis has been able to analyse from the empirical work on CPI in Pakistan and Malaysia lessons that can be drawn from this experience in CPI and how they can inform the policy and research communities there and in other countries.

7.1 *Findings from this research*

A major contribution of this thesis has been to help explore CPI in developing countries, using the EPI literature that is predominantly European, the emerging CPI literature and the larger climate change and sustainable development literature. In order to explore the integration of climate change and sustainable development at the national scale, which in effect is a component of CPI, this research analysed the structures and processes evident from both EPI and CPI literature and practice at the national scale in Pakistan and Malaysia. As was pointed out in Chapter 2, this integration does not occur in a vacuum, but rather in existing functioning policy systems and structures, which this research identified and explored.

This research exposed the limited compatibility of the existing EPI literature with the conditions in developing countries. The thesis has also been able to point out that despite the incompatibility of the EPI literature to developing countries, some of the results from the

empirical work could also be seen in developed countries, which have had much more experience and nuanced histories of EPI and CPI.

The research findings presented in Chapters 4 and 5 explore CPI at a national scale in Pakistan and Malaysia. It was clear from the study that incremental movements towards CPI are taking place in both countries. Both countries have established various structures and processes, such as climate change committees, climate change policies, task forces and national planning processes that include consideration of climate change. Both of the case study countries have made a start on CPI; however, these two countries evidence challenges in engendering CPI that can be summarised as follows:

- weak and insufficient information and research capacity on climate change
- central financial portfolios not effectively engaged in policy discussions
- availability of finance has been considered a problem by the policymaking community
- weak connectivity between various structures and processes
- weak utilisation of the synergies between national and international reporting and planning processes
- over-emphasis on the contribution of global multilateral process at the expense of domestic policy development.

A synthesis of the results from the two countries was undertaken in Chapter 7, which also drew on the literature and practice of other developed and developing countries. It demonstrated that many of the results had similarities despite the different contexts in developing and developed countries. The literature on CPI in Europe has exposed that resources, political will and time were major factors in engendering CPI in Europe. In Malaysia and Pakistan, resources and political will need to be increased and conditioned for integration to be achieved. In regards to timing, greater stability in sustaining and moulding existing structures and processes on environmental, climate and development policy is required to allow for meaningful integration mechanisms. Climate policy integration is not a short-term project.

Mainstreaming or integration is already occurring, but the embedding of climate change across policy sectors is weak. A silo-based culture across policy systems emerged as a major issue; where institutions and organisations within government were acting in silos based around their separate, specific mandate rather than fully incorporating climate change in the sectors

and themes they were responsible for. A process to determine mitigation and adaptation costs has begun in both countries, which, when fully completed – in the case of Pakistan, some preliminary figures are available from a recent study sponsored by UNFCCC (Khan et al. 2011) – should be able to direct climate change investment decisions in the coming years. Developing a more robust information and research capacity on climate change is required in both countries. This capacity will assist policymakers in making informed policy choices on climate change, among other developmental priorities, and help engender a sustainable development approach to decision-making (Chapters 4 and 5).

The next section reviews the research questions and contributions of the study and this will be followed by policy recommendations for engendering CPI at national scales.

7.1.1 Research questions and contributions

The thesis investigated five research questions that directed the empirical and theoretical investigation (Table 15).

Table 15 Research questions and contribution within the thesis

	Research questions	Contribution
1	What is the scholarly discourse on integrated climate change and sustainable development?	Chapter 2 This chapter develops from the existing literature theories, concepts and policy frameworks on climate change and sustainable development and lays the basis of using EPI as a model to study CPI in developing countries.
2	In what ways do policy systems and processes at the national level respond to climate change and sustainable development?	Chapters 2, 3 and 4 This question was investigated using an empirical case study framework to study the structures and processes, constraints and opportunities in two developing countries at national scales.
3	In what ways can CPI learn from EPI?	Chapters 2 and 6 Building on the foundations of EPI, this question was investigated using the similarities and differences between CPI and EPI, and the relevant structures and processes proposed or in existence, and constraints and opportunities at the national scale in two developing countries.
4	In what ways do policymakers respond to climate change at the national scale to enable mainstreaming or CPI in the decision-making structures and processes?	Chapters 2, 3 and 4 This question was investigated in the case studies to bring out the challenges and opportunities that are present in CPI.
5	What lessons can be drawn and are these lessons transferrable to other countries and levels of governance?	Chapters 6 and 7 This question draws out the overarching contribution of the CPI situation in the case study countries to illustrate lessons for policy directions and future research opportunities.

7.2 CPI: Key policy directions

The primary audience for this thesis is the research and policy communities engaged in climate mitigation and adaptation policy. A conscious decision was made to not separate the policy responses into mitigation or adaptation, but analyse the study at a whole-of-government national level that encompassed both dimensions. This classification brought a new set of challenges and opportunities, which was exposed in the previous chapters. This section distils some of the findings to define policy directions for climate change in developing countries and answer the fifth question in our research: *what lessons can be drawn and are these lessons transferrable to other countries and levels of governance?*

We have chosen not to make a 'laundry list' of proposals, but rather to identify some key policy directions to be considered as CPI is operationalised in developing countries. This will not be a generic blueprint for all developing countries, as the suitability or otherwise of any policy measure or recommendation can only be ascertained within the contexts of the national circumstances of these countries. These recommendations require further expansion and refinement to determine the model best suited to the country in question. These suggestions are our prime options for policy reform in the near term and should be addressed in the short to medium term given the scale of the climate challenge that confronts us and the relative lack of progress with CPI. The exact priority setting needs to be made by country themselves as the capacity and national circumstances of countries differ. This research does not subscribe to a one-size-fits-all approach.

a. Connecting various structures and processes

What has been evident through this research is that in Pakistan and Malaysia various structures and processes, such as task forces, working groups, cabinet committees, interdepartmental committees and expert panels, were created but had limited capacity to influence the economic decision-making process in favour of operationalising a low-carbon and climate-resilient pattern of development. This is not unique to the two countries, as the literature does point to similar challenges in other countries in both the developed and developing worlds (Chapter 6). In order to deal with this problem, it is important to connect the structures and processes to ensure policy coherence and utilise synergies. For example, committees created for preparing climate-relevant policy need to be fully integrated within the relevant structures for key sectors, such as energy and agriculture. If they are not

integrated and formally connected with the inputs and outputs of both processes, a comprehensive strategy cannot be prepared. This would also help connect the various institutions and organisations to prevent a silo culture and help prepare win-win strategies and action plans. For example, if a new committee is created to deal with issues on climate change, stakeholders involved in the process must also be involved in other related committees on national economic planning. Such cross-memberships would maximise information exchange and ensure policy coherence and adaptability of existing processes to the dictates of new policy imperatives on climate change.

b. Involve key stakeholders

In any country, understanding, appreciating and utilising the perspectives and skills of key stakeholders is an essential prerequisite for delivering effective policy outcomes. This involves a careful determination of the key stakeholders in the country. One important stakeholder is the finance and economic planning community within government. In Chapter 2, we queried how a finance minister might decide what to fund in terms of adaptive or mitigative capacities against other policy imperatives. The literature from developed countries has demonstrated the central position of resources in embedding CPI at national scales (Chapter 2), and the issue is more acute in developing countries. This characterisation clearly places finance officials and ministers in a central position in any climate decision-making. If there is no avenue for provision of increased resources, CPI cannot occur. This research has shown that resources include financial, human and knowledge resources (Chapter 7).

Dealing with finance and other central agencies and ministries is a challenge that emerged strongly from this research. In order to deal with this constituency, both information and inclusion are necessary conditions – information in terms of the related costs and benefits of mitigation and adaptation, and inclusion in various policy structures and processes. The climate community needs to be inclusive in terms of participation of other important stakeholders; limiting it to technocrats and environmental specialists will not get the required policy and fiscal response to climate change.

Finance officials in developing countries are dealing with multiple challenges including health, education and poverty, and climate change needs to be established as one of these priorities; however, this will not happen without their inclusion in the policymaking process on climate change. It is important to synergise the various policy responses. For example, energy access is

an important issue in development and relates both to mitigation and adaptation. Combining this challenge with the benefits of a low-carbon development model provides win-win opportunities and this can only happen if finance officials are included in the discussions, so that any national budget-making process seriously evaluates the climate implications of policy choices.

Identifying the key stakeholders in engendering CPI should be a priority task for policymakers and would depend on, *inter alia*, the country's national circumstances and policymaking systems. There can be no generic checklist for all countries. However, it is evident from this research that the stakeholders, especially non-governmental organisations and research communities, should be an essential part of structures and processes.

c. Build information and research capacity

As pointed out earlier, information and research capacity remains a key requirement for effective climate policy and needs to be an important part of any climate strategy and action plan. This involves looking at various structures and processes that can create and distribute effective information. There is no use in creating a research agency when its links to the climate policymaking community have not been established. In order for CPI to take place, research needs to include policy-relevant research. Policymakers are slowly being sensitised to climate change, and awareness is increasing, but their policy response on climate change remains weak. Information gaps have been identified as a major challenge and this needs to be addressed with climate research and regularly updated accounts of the relevant costs for undertaking mitigation and adaptation.

The information needs will be country-specific and relevant to particular policy requirements, and thus it is difficult to collate a checklist that can be used for all countries. However, pieces of information – such as down-scaled estimates of impacts, sectoral costs, benefits of action and other capacity requirements including information and research mentioned in national communications and national adaptation programmes of action (NAPAs) – have to be fully developed and operationalised in order to embed climate change as a whole-of-government activity. The case for building ‘information and research’ capacity made here relates to overview/cross-sectoral assessments that improve the ability of national policy processes to trade-off, prioritize, seek synergies and avoid maladaptation across sectors – the central task in addressing a policy domain as diffuse as climate policy. This information can be variably

used in different circumstances like risk assessments, budget planning, land-use planning etc. The importance of better developing the information capacity of countries should not be underestimated. Without comprehensive and authoritative information to allow assessment of policy options, CPI will struggle to be furthered across sectors which have, first, other existing priorities for investment, and (ii) generally strong information bases supporting those priorities and investments.

d. Building a sustainable development capacity

Dealing with an integrated challenge like climate change requires addressing a holistic range of policy and institutional factors that are beyond the capacity of any single department or agency. This requires an integrated response and strengthening capacity at all levels of government. Building such a capacity would require that relevant agencies address capacity-building as a goal and see what inter-related tasks need to be addressed and build that into what we would call a “sustainable development capacity”(Chapter 2). This nomenclature would address all elements of sustainable development and be built on conditions at country levels: that is, be country driven. No holistic range of blue-prints can be given for this and the strategy needs to be built at country-levels responding to the national priorities and sustainable development aspirations of the countries themselves.

e. Global and nation scale: utilising synergies

The case studies (Chapters 4 and 5) have demonstrated key opportunities available within the structures and processes at the global level that can be exploited to engender CPI at national scales. This section will elaborate on them.

i. Connect national and international reporting

A party to the UNFCCC has obligations to produce a national communication every few years. This is a comprehensive document that includes information on GHG inventory, mitigation, vulnerability and adaptation, technology, finance and capacity building. In terms of future development of the convention, countries will need to prepare ‘nationally appropriate mitigation actions’ (NAMAS) and more frequent inventories.

This process is and will be a serious investment of time and resources. In order to make effective synergies between international reporting needs, national policy frameworks and

national information systems, such as five-year plans, it is important to ensure that the two reporting processes are linked. This will reduce costs and ensure that the information is fully utilised. For example, the GHG inventory is a serious effort that generates the country's GHG profile. This information needs to inform energy policy, particularly in countries where energy is a significant GHG emitter. Vulnerability and adaptation assessments that are generated as a result of the national communication process should be expected to influence national policies dealing with vulnerability and adaptation. For example, if health is identified as a vulnerability issue, then climate change must be part of the health policy and the drivers and challenges of climate change must be part of the health policy. One of the ways to do this is to ensure that health officials are engaged in vulnerability discussions and stakeholders on vulnerability are part of the health policy discussions and information generation, targeting both national and international processes. Policy formulation and implementation will also have financial implications and so involvement of finance officials is necessary during these formulation processes rather than *post hoc*.

Countries, of course, like to prepare a positive national communication that presents relevant climate change information and especially policy activity in a favourable light: that is the nature of such international reporting processes. However, it is not the case that this reality renders too difficult this proposed integration of national and international information generation and policy formulation. It is therefore crucial for policymakers to synergise the two processes, international reporting and national policy and planning, and the information the latter requires, to assist in engendering low carbon and climate-resilient development in a more efficient manner (Chapters 4 and 5).

ii. Effective use of global multilateral process

The preceding point relates to a broader tension between national and international priorities. What has been evident throughout examination of the case studies (Chapters 4 and 5) is that a significant amount of time and resources is spent on participation in international meetings and processes. Such global participation is beneficial to some extent, but uses significant resources and time for policymakers, which reduces the time they can spend on domestic climate policy development and implementation. Limited human and other resources is a real issue in developing countries. Such limitations can become an additional excuse for inaction or slow progress with domestic policy, on top of the slow response of developed countries in

achieving effective climate mitigation and action on technology transfer and finance under the UNFCCC.

Pakistan and Malaysia have been in leadership positions in global multilateral processes at various times, but have been slow in developing national climate policies and action plans. This was pointed out in Chapters 4 and 5, and suggests a *prima facie* case that there is capacity for being more proactive. Delaying national action on climate change is not an option for any country now, if there is going to be any serious chance of transitioning to a low carbon and climate-resilient development approach. It is now crucial for policymakers to utilise the synergies of the two processes (i.e. global and national) and make effective changes at the national scale for better climate policy implementation. This requires a good apportionment of time devoted to the two processes, so that national level action is not delayed and subjected to the dictates of the international processes.

Involvement in global climate processes is important and useful, but it remains critical for policymakers to have appropriate time and resources at their disposal to perform effective action on climate change in the country. This is something that individual countries need to undertake strategically and appropriate division of tasks and resources for not only effectively participating in global climate processes but also in taking robust climate action at home. For example, use of national focal points in all international meetings needs to be weighed against their time and existing commitments at home. Broadening the base by involving relevant stakeholders in energy, finance and foreign affairs agencies and ministries can be a useful strategy, leaving time for officials in the lead (often environment) agency to be engaged in national activities and programs on climate change. This spreading of tasks across portfolios will also instil climate policy and science knowledge more widely across government, aiding integration. Connection of national and international information generation and collation needs should offer efficiencies in this regard.

7.3 Future research opportunities

This research points to new directions for future research on CPI. In particular, the present study expanded the current limited scope of sectoral research in EPI, CPI and sustainable development to include the detailed dynamics of a “policy integration” approach. It has exposed the challenges and opportunities emanating from such a spectrum and has indicated further research potential in this area.

In terms of literature, the use of a predominantly European information base on EPI becomes problematic when applied to developing countries. This weakness clearly suggests a further development of the literature and knowledge that is amenable to developing country conditions. What has also become clear from this research is that a combination of analysis of EPI, CPI and sustainable development literature and the wider political economy context is a necessary condition for a comprehensive CPI analysis at national scales. This is where future research and practice needs to focus; a preliminary effort using two developing countries has been made in this study, providing clear directions for future research in other national contexts.

It is also clear that we need further research on possibilities for CPI at national scales in developing countries. This is one major contribution that the study makes, but points to further research possibilities in this field; an area largely ignored in CPI literature and practice. There has indeed been emerging discussion since the completion of this research, arising from the intergovernmental Rio+20 processes. This is addressing global economic, social and environmental in a more integrated manner augmenting systems thinking. There is currently a discussion around the issue of building “sustainable development goals” in the post-2012/2015 environment⁴⁶. This renewed integrated approach has increased the interest of researchers and policy makers to start including CPI as an important component of future research and practice at both global and national levels. The present research is a step in that direction.

We need detailed analyses of costs and benefits of mitigation and adaptation so that policymakers have an informed basis for determining their policy options. Also, structures and process at the national scale – such as climate change committees, planning processes and their connection to climate change structures, any policy targets and how they shape or influence existing structures – need to be part of future research, as without analysis of existing processes, we cannot draw firm conclusions about the extent of CPI in countries. Nor can we begin to translate experiences of one jurisdiction to inform policy and institutional change elsewhere (whether the lessons are positive or negative).

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<http://www.uncsd2012.org/content/documents/727The%20Future%20We%20Want%2019%20June%201230pm.pdf> (accessed October 10th, 2012)

We suggest that a future task would be to review national communications to ascertain whether practice (or at least proposed national actions) are in fact ahead of the CPI literature in identifying implementation strategies. An initial examination has been done in this research by analysing how the national communications process is connected to domestic planning processes. However, as more developing countries submit future rounds of their national communications (i.e. second and third national communications), further investigation can be made on the basis of wider and more recent data than were previously available.

Due to the nature of this research, being focused on national *public* policy, and the paucity of data on private sector, it was not possible to pursue the issue of private sector in any detail. Given the scale of involvement in private sector in implementation that is expected in view of growing needs of a low-carbon economic structure, it is imperative that this component is also explored to understand the impacts of CPI on the private sector and *vice versa*.

This research has shown using two case studies that setting up a structure and process on climate change, such as a committee or task force or any policy target, is only a means to CPI and not an end in itself. On-going evaluation of emerging CPI initiatives would provide insight into the very important matter of implementation and maintenance over time.

7.4 Concluding remarks

This thesis intended to inform the research and policymaking communities with a more detailed exploration than was previously available of CPI at the national scale grounded in two developing countries, Pakistan and Malaysia. The study has used a whole-of-government analysis, which is a fresh contribution to the CPI literature. It is clear from the thesis that such a level of research is required for many countries to be able to make a comprehensive assessment of the challenges and opportunities of CPI.

The work contributes to a new interpretation of CPI within a public policy and political economy framework. It suggests an integration dynamic that advances low carbon and climate-resilient development and questions the hitherto piecemeal and incremental approach that national and global policymakers have internalised to deal with the climate challenge. This study views mainstreaming as a vehicle for advancing low carbon and climate-resilient development rather than as an end product of existing practices. This requires a paradigm shift from existing separation of discourses on EPI and CPI to advance sustainable development.

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