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Degree of Master of Science

Who the Cap Fit:

Enhancing Institutional Effectiveness for Climate Change Adaptation

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ABSTRACT OF THESIS submitted by:

Sarah CZUNYI for the degree of Master of Science and entitled: Who the Cap Fit: Enhancing Institutional Effectiveness for Climate Change Adaptation.

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Adaptation to climate change is an emerging governance challenge, characterized by complexities and uncertainties. International institutions have started to implement adaptation activities, particularly targeted at vulnerable populations. However, to be effective these measures must take be inherently context-specific to suit the ecological conditions and socio-economic aspects of any given locale. This raises the question of how international institutions are able to translate their often broadly defined global mandates, and downscale them to suit the specific adaptation needs of given populations and ecosystems.

This thesis takes a case study approach to investigate the climate change adaptation experiences of selected UN-led programmes, investigating their responses to context-specific needs, and highlighting the opportunities and challenges found in these experiences. Through the use of the 5C+ Protocol theoretical framework, the experiences of these programmes were compared along a number of themes to determine which factors were of greatest significance to their work.

The research concludes that the most significant challenges of implementing climate change adaptation measures are: early inclusion of stakeholders to enable support and ownership of activities; meaningful participation of all levels to identify relevant problems and solutions; and the coordination of activities across affected sectors and governance levels.

Remediation of these challenges can allow for greater programme effectiveness, and the strengthening of adaptive capacities to respond to long-term threats of climate change. However, to be effective, such adaptation measures must also incorporate longer time frames and deliberate learning processes, to respond to the changing circumstances and potential non-linearities associated with the effects of climate change.

Keywords: climate change adaptation, adaptive capacity, learning, international institutions, UN

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List of Abbreviations

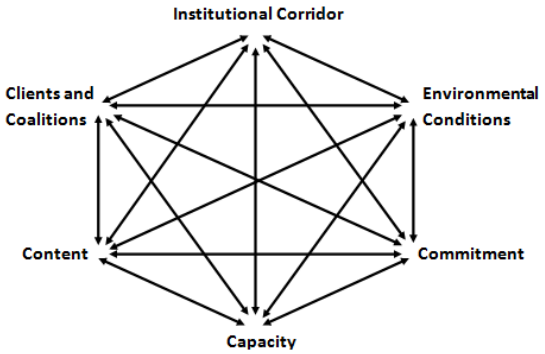
CEG	Collaborative environmental governance
DAC	Development Assistance Committee
FAO	Food and Agriculture Organization
GCM	General Circulation Model
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	greenhouse gas
HDI	Human Development Index
IISD	International Institute for Sustainable Development
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
JP	Joint Programme
KM	Knowledge Management
MDG	Millennium Development Goal
MDGF	Millennium Development Goal Achievement Fund
NGO	non-governmental organization
OECD	Organization for Economic Co-operation and Development
PMC	Project Management Committee
ppm	parts per million
RQ	Research question
UN	United Nations
UNCHE	United Nations Conference on the Human Environment
UNDG	United Nations Development Group
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
WHO	World Health Organization
WMO	World Meteorological Organization

Executive Summary

Adaptation to climate change is an emerging need worldwide, given its imminent threats, and high levels of vulnerability among certain socio-economic groups. In response, numerous international institutions have begun implementing climate change adaptation measures. Yet adaptation to climate change is a complex governance challenge, characterized by uncertainty of impacts, long time frames, and non-linearities. To be successful, adaptation measures must take into account processes at multiple scales, and be inherently context-specific to suit the ecological conditions, socio-economic aspects and institutional framework of any given locale. This raises the question of how international institutions are able to translate their often broadly defined global mandates, and downscale them to suit the specific adaptation needs of given populations and ecosystems.

This thesis research takes a case study approach to investigate the climate change adaptation experiences of selected Joint Programmes (JPs) operating under the United Nations Millennium Development Goal Achievement Fund. These JPs have a unique framework, in that they are implementing their activities jointly through several UN agencies, as well as government and community partners. Adaptation activities are also being implemented at both national and sub-national levels.

A theoretical framework, the 5C+ Protocol, was used to investigate the JPs' approaches to respond to context-specific needs, thus highlighting the opportunities and challenges they faced in implementation. The experiences of these programmes were compared along a number of variables, and relationships between these variables, (shown in the diagram below) to determine which were of greatest significance to the work of the JPs.



Primary data was collected through in-depth interviews with selected JP representatives. The interviews were inspired by the 5C+ Protocol, and then analysed according to the variables shown in the diagram above. Interview results were also reviewed by external adaptation experts and compared to scientific publications, in order to ensure the applicability and relevance of this study's conclusions to a wider audience.

The results of this thesis research conclude that the most significant variables from the experiences of the JPs, and the challenges associated with them, are:

- early inclusion of stakeholders to enable support and ownership of activities, and the identification of supportive groups and champions (commitment/clients and coalitions);
- meaningful participation of all levels to identify relevant problems and solutions (content), including the integration of scientific assessments and local knowledge; and
- the coordination of activities across affected sectors and governance levels (institutional corridor).

Remediation of these challenges can allow for greater programme effectiveness, the building of adaptive capacities, and ultimately the long-term sustainability of climate change adaptation goals. However, to be effective, such adaptation measures must also incorporate long-term planning and deliberate learning processes, to respond to the changing circumstances and potential non-linearities associated with the effects of climate change.

Adaptive, cross-scale and collaborative management approaches are key to ensuring international institutions are able to address the complexities and urgency associated with the needs of climate change adaptation. However, an important challenge faced by international institutions such as the UN is the relevance of downscaling their global initiatives to suit localized needs. The nature of climate change adaptation, in requiring a high level of context-relevance and specificity, requires that such international institutions either invest the time and effort required to build relationships with beneficiaries, or alternatively forge strong relationships with key counterparts who may be a better fit to delivering such contextualized measures.

"how did it get so late so soon?"
- Dr. Seuss

Chapter 1: Introduction

Climate change adaptation has emerged as a pressing need worldwide, as shifts in climate patterns and their consequences are already apparent. It is also becoming clear that the effects of climate change will differ significantly among geographical regions and ecosystems, and between socio-economic groups. The impacts of climate change thus have not only ecological, but also socio-economic and institutional dimensions (IPCC 2007). In response to these imminent, and in some cases already occurring threats, many institutions have begun implementing or planning climate change adaptation activities. Yet as the challenges of climate change are new, and to an extent unprecedented in their complexity, adequately responding to it poses a major challenge to people and their institutions.

The past 100 years has seen significant increases in global greenhouse gas (GHG) concentrations due to the burning of fossil fuels and changes in land cover (IPCC 2001). Today, atmospheric GHG levels are significantly higher than previous inter-glacial periods, with concentrations today reaching 391 parts per million (ppm), compared to a stated 'safe' level of 350 ppm (Shakun et al. 2012, Hansen et al. 2008). Based on analyses of the paleo-climatic record and model-based projections, high concentrations of atmospheric GHGs have been linked to future increases in temperature (Shakun et al. 2012). This is already evident, with global average temperatures reaching record-high levels in the past few years alone (WMO 2012). Shifts in temperatures lead to changes in the hydrological cycle, which can not only induce extreme climatic events such as drought, but also extreme weather events such as hurricanes (IPCC 2012). Along with the risk of rising sea levels, alterations in precipitation patterns, and many non-climatic factors such as deforestation and rising income inequalities, these rapid and extreme changes leave many vulnerable to the impacts of climate change (IPCC 2007).

Climate change is often represented by shifts in the extreme, and it is often such occurrences that can push the adaptive capacities of society to their limits. In contrast, however, changes in the average usually occur over longer periods of time, giving society more time to adapt. While climate change mitigation (reduction in GHG emissions) is often thought as the solution to prevent extreme climatic changes, due to inertia in the atmospheric system the effects of any mitigation efforts will be delayed (Hansen et al. 2008). Thus, while mitigation is still necessary to avoid further climatic changes, a growing imperative is also adaptation to the current and future potential impacts of these changes.

The effects of climate change disproportionately affect vulnerable populations who have limited capacities to respond or adapt to such changes in their environment (IPCC 2001, IPCC 2007). This is not only because of physical conditions, such as living in environments which are degraded or more prone to natural disasters, but also because of socio-economic factors which affect adaptive capacities. Vulnerability to climate change is therefore due to both physical and non-physical factors; hence addressing the effects of climate change requires also considering the socio-economic factors that may be the root causes of vulnerability. Due to awareness of these emerging issues worldwide,

there has been a growing focus on vulnerability and climate change adaptation, particularly in the developing world, home to the majority of vulnerable populations.

A growing number of international organizations have responded by implementing climate change adaptation activities through special initiatives or by integrating adaptation into their mainstream development assistance. This can be seen by the recent increase in focus for climate change adaptation within influential international forums such as the Organization for Economic Co-operation and Development's (OECD) Development Assistance Committee, the United Nations (UN) and leading international non-governmental organizations (NGOs). The most direct evidence of this interest moving toward tangible actions, however, can be seen by an increase in international organizations' funding directed towards climate change adaptation activities (Bulkeley and Newell 2010).

Mainstreaming climate change adaptation into existing development work can be seen as positive, as the effects of climate change are manifested not only due to climatic conditions, but also due to differences in vulnerability caused by a multitude of historic, economic and social factors which it is assumed development interventions will take into account (Huq and Reid 2004).

However, the nature of the climate change problem poses significant challenges associated with governing across and between different scales and levels (Cash et al. 2006). Climate change cuts across social, ecological and institutional sectors, ranging from local to global levels, and immediate to long time frame considerations. The cross-cutting nature of climate change requires the coordination of several agencies and interests, who do not have the history or culture of collaborating towards such efforts, let alone complex ones. Moreover, timely responses are pertinent; given the imminent threats of climate change, the need to adapt effectively and within short time frames is of utmost importance to the most vulnerable.

The governance of climate change thus necessitates consideration of these complexities, yet a question remains whether and how international institutions have been able to adapt their interventions to the different scales and contexts within which they work, in response to the particular needs of climate change adaptation.

1.1. Focus Problem

The scientific study of climate change adaptation is a new field that does not have a long history of experience to draw upon. There remain a lot of unknowns in the field, and combined with the imminent threats and complexities of climate change impacts, there is a need to implement adaptation measures in the most effective way. Yet climate change adaptation, to be successful, must target both the symptoms and root causes of vulnerability. These measures must also take into account processes at multiple scales, and be inherently context-specific to suit the ecological conditions, socio-economic aspects and institutional framework of any given locale. This raises the question of how international institutions are able to translate their often broadly defined global mandates, and downscale them to suit the specific adaptation needs of given populations and ecosystems.

1.2. Objective

The overarching objective of this thesis work is to analyse the experiences of climate change interventions being implemented through international institutions, in order to first assess their ability and approaches to respond to context-specific needs, and secondly to highlight the opportunities and challenges found in these experiences. A case study approach is adopted, to collate lessons from specific climate change adaptation interventions. The results of this analysis are also intended to be used by international institutions to inform the procedural design of their adaptation-related interventions in the field.

1.3. Rationale

The UN plays a unique role in the international system, boasting near-universal membership through which its norm-setting role and operational work can have influence in all corners of the world (UN 2008). Concurrently, the UN has also emerged as a major international actor in the implementation of environmental interventions, largely under the coordinating mechanism of the United Nations Environment Program (UNEP). UNEP's status and mandate within the UN[1] means that this organization is a primary actor through which current and future climate change interventions will be channeled. However, due to the cross-cutting nature of the climate change problem, as well as overlapping mandates, other key UN agencies such as the Food and Agriculture Organization (FAO) and the United Nations Development Program (UNDP) also have a stake in climate change adaptation activities.

Despite its international standing, problems of institutional duplication and fragmentation within the UN system have come under increasing criticism, which has led to efforts to improve institutional collaboration. Arguably, this is also in response to a growing awareness by both scholars and practitioners, of the importance of accounting for multiple scales and levels for effective management of complex problems (Cash et al. 2006), such as climate change.

Consequently, there is an emerging role of collaborative environmental governance (CEG), not just in the UN, but increasingly across numerous international institutions. CEG is the concerted effort between diverse stakeholders (public, private and civil society) towards the management of common environmental issues (Gunningham 2009). This new form of governance is reflected in the new UN initiative called 'Delivering as One' that aims to better coordinate and harmonize program and project delivery.

The case study that has been chosen for this thesis work accepts the importance of the UN's role in the international environmental arena, and also the emerging role of CEG. The case study looks in-depth at the work of 10 national Joint Programs (JPs) implemented between 2006 and 2012 under the coordination of UNEP. These JPs were mandated, under the Millennium Development Goal Achievement Fund (MDGF), to carry out environment and climate change activities in collaboration with various counterpart organizations (UN agencies, governments, and NGOs).

The case study for this research was selected as the JPs are part of a common global program, yet given their broad geographical scope, able to showcase various approaches to regional

[1] However, it must be noted that as a Program, UNEP does not have universal membership.

differentiation and contextualization. They are also novel as they form part of the pilot phase of the Delivering as One initiative. These cases are thus valuable for answering questions about approaches to cross-scale governance, the contextualization of adaptation, institutional collaboration, and general lessons for climate change activities emerging from their joint experiences. The methodology chosen to analyse the cases is a modified theoretical framework, the '5C+ Protocol,' which was initially developed as a tool for analysis and prognosis of policy implementation.[2]

1.4. Research Questions

Overall, the thesis analysis is guided by three research questions.

Primary (RQ1):
How can international institutions such as the UN deliver their interventions to suit the needs of context-specific climate change adaptation activities?

Secondary (RQ2):
What factors, and their relationships, are the most significant from the experience of the JPs for the successful implementation of adaptation activities?

Tertiary (RQ3):
How applicable is the 5C+ Protocol to the analysis of climate change adaptation initiatives of international institutions?

1.5. Research Audience

The primary research audience is the United Nations Development Group (UNDG), the chief mechanism within the UN trying to improve climate change activities and collaboration in the implementation of national-level programmes (UN 2008). They are also the umbrella body for the MDGF initiative, thus results of this research have direct relevance to the work of the UNDG.

Results of this thesis research will also contribute to synthesis of lessons learnt from the MDGF environment and climate change program, coordinated by UNEP's MDGF Knowledge Management (KM) secretariat in the Division of Regional Cooperation.

Beyond the MDGF initiative, the work also can be of use for other international organizations to review experiences, and help guide future practice and improve effectiveness in the implementation of climate change adaptation measures.

1.6. Scope and Limitations

The two topics of climate change adaptation and international institutional governance form the broad conceptual basis of this thesis work. However, the case studies chosen limit the scope of this work to the specific experience of the MDGF environment and climate change window.

The primary data for analysis was collected through interviews conducted between 27 February to 2 March 2012, at a MDGF KM workshop held in Ecuador, and two online interviews conducted later in

[2] This theoretical framework and its application to the thesis work is further explained in Chapter 2.

March and April 2012. While there are a total of 17 JPs under the MDGF environment and climate change window, due to some country representatives not attending the workshop, time limitations and language barriers, in-depth data could only be collected for 10 JPs in total. This sample forms the limitations of the thesis' primary analysis.

The data sample on which this thesis analysis is based is small, thus the sample cannot be considered statistically significant in quantitative terms. This limitation is accepted, hence it is not assumed that the results of this work will be universally applicable. However, it should be noted that the data sample still includes broad geographical differentiation (countries from Latin America, Africa, Middle East, Europe and Asia), as well as a distinct range of levels of economic development, political, social and ecological contexts. The specific climate change adaptation interventions carried out by each of the JPs also included a range of different activities and partnerships, from the highest level of government to NGOs and small communities. These characteristics make the sample more applicable to a broad range of contexts.

In order to validate the results and broad themes emerging from the interviews, these results were discussed and verified through secondary interviews conducted with key experts in the field of climate change adaptation, as well as other relevant studies. Thus, the common themes that emerge from the analysis can be considered generally applicable.

1.7. Study Outline

This thesis work is divided as follows. Chapter 2 gives an overview of the methodology used, including the theoretical framework and its application to the thesis research, and further background to the case study. Chapter 3 reviews and summarizes the literature pertinent to this thesis work, such as responses and challenges of adapting to climate change, and international environmental governance. Chapter 4 synthesizes the results of the interviews conducted with JP representatives, along the themes of the theoretical framework. Chapter 5 discusses the interview results, relating them back to the research questions. Finally, Chapter 6 provides a conclusion and set of recommendations based on the results of the thesis work.

"if a theory explains everything, it explains nothing"
Gunderson et al., 2002

Chapter 2: Methodology

The research was based primarily on a qualitative approach, supplemented, as required and feasible, by quantitative data. This approach was deemed the most relevant for the nature and type of analysis to be undertaken. Adaptation to climate change is a multifaceted area of study, and inherently linked to many non-climatic factors, such as economic, social and political conditions (Adger et al. 2009). The focus of this thesis research, on both climate change adaptation and institutional effectiveness, thus requires a broad scope of analysis which can take this complexity into account, hence the primarily qualitative approach chosen.

The thesis also uses a case study method, as this allows for more in-depth analysis of the complexities of adaptation, while providing some practical focus. To allow for comparison within and between the different programs selected for case study, it was further decided to use a common theoretical framework to guide the data selection and analysis.

This chapter details: the methodology used in the thesis research; the theoretical framework; the case study selection process; and the data collection and analysis.

2.1. Theoretical Framework

The theoretical framework chosen to guide the thesis research and analysis is Najam's (1995) '5C Protocol.' Najam's framework was developed based on a synthesis of literature on policy implementation, with the purpose of helping to analyse and diagnose practical policy implementation measures.

This theoretical framework was deemed most appropriate to the thesis work, as it guides investigation of numerous factors which influence the implementation of policies. The framework also emphasizes the ways in which these factors, at various levels, interrelate and impact upon one another. The framework therefore has a dynamic element, while at the same time providing a structured frame so as to not get lost in the complexity of issues being studied.

2.1.1. The 5C Protocol

Adil Najam's 1995 paper*, Learning from the Literature on Policy Implementation: A Synthesis Perspective*, is primarily concerned with the 'domestication' of international environmental commitments, looking specifically at how such commitments are actually translated into practice at the domestic level. He argues that scholars have not paid sufficient attention to on-the-ground implementation, also criticizing a largely state-centric approach in the literature. His paper reviews various implementation studies and efforts, representing a vast array of contexts and governance types.

Najam concludes that there are some common themes in the reviewed literature, which he identifies as five factors, or the '5Cs'. He posits that these 5Cs can help to guide the analysis of policy implementation, as well as prognosis to inform more effective implementation. He states that they are interlinked, "critical explanatory" variables which can be used to review the effectiveness of policy implementation. The 5Cs are defined as follows (Najam 1995, ps. ii-iii):

- **Context** – the institutional corridor/environment through which the policy must travel, which also provides the boundaries for specific implementation activities;
- **Content** – of the policy itself, i.e. how it "problemitizes the issue" at hand, and aims to solve the perceived problems;
- **Commitment** – "of those entrusted with carrying out implementation, at various levels";
- **Capacity** – "of implementers' ability to carry out the changes desired"; and
- **Clients and Coalitions** – "those groups whose interests are enhanced/threatened by the policy," and the actions they take in response to its implementation.

Najam argues that it is not only the 5C variables themselves, but also the relationships between them (as seen in Figure 1 below) that can help review policy implementation performance (and the detection of challenges/opportunities), thus also providing a basis for prognosis.

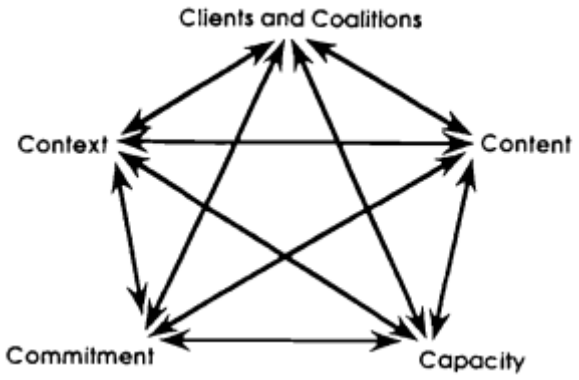


Fig. 1: 5C Protocol, Source: Najam 1995

Alongside the framework, three claims are also introduced (Najam 1995):

- **General acceptability**: while some may prioritize the five variables differently, scholars and practitioners will generally agree upon the importance or inclusion of all factors.
- **General applicability**: as the framework was developed based on a broad review of the literature, it can be used to analyze implementation of different issues (such as environment, education), different levels (from local to international), and within different systems and types of governance (such as central, decentralized or even from developed to developing nations).
- **Specific relevance**: due to the gaps in scholarship of international environmental governance and the domestic implementation of international environmental commitments, the framework is particularly relevant to these issue areas.

The framework has high validity, based on the variety of sources that informed its development, its general acceptability and applicability. The framework thus has relevance to the specific research and case study selected in this thesis, as the MDGF environmental work covers a wide range of issue areas, and also varying governance levels and types.

Moreover, as the 5C Protocol is motivated and informed by work on the domestic implementation of international commitments, this is broadly applicable to the MDGF mandate of conducting national activities to facilitate progress towards the internationally agreed-upon Millennium Development

Goals (MDGs). Additionally, one of the primary issues that motivates this thesis work is the viability of 'downscaling' global climate change strategies to lower levels of implementation, hence directly linked to the issue of international policy 'domestication.'

However, the specific focus of this thesis work – climate change adaptation – necessitates consideration of additional elements. The specific application of the 5C Protocol to this thesis work is outlined in the following section.

2.1.2. Applying the Framework

The 5C Protocol framework is used as a basis for asking and directly answering the following research questions:

RQ2: *What factors, and their relationships, are the most significant from the experience of the JPs for the successful implementation of adaptation activities?*

RQ3: *How applicable is the 5C+ Protocol to the analysis of climate change adaptation initiatives of international institutions?*

The research structure and analysis focused on investigating how the specific JPs have dealt with each of the five variables in turn, as well as their relationship to one another (RQ2). The process taken was guided by the original formulation of Najam's framework:

> "the task is to catalog the strength and influence of each variable on specific implementation efforts as well as to identify critical linkages between them on the basis of their strengths and weaknesses, and, most importantly, their potential to enhance the effectiveness of the particular implementation process" (Najam 1995 p.36)

This cataloguing of the variables was achieved through collecting information on the selected JPs chosen for analysis through desktop studies, interviews and participatory observation.[3] The collected information was then reviewed through the lens of the 5C Protocol, and its modifications (outlined below).

The intention of this analysis was to shed light on the challenges and strengths in dealing with the different variables, thus allowing the research results to "[move] from the merely descriptive to the potentially prescriptive" (Najam 1995 p.36), and provide some general recommendations for similar/future climate change adaptation work. As Najam's framework was initially developed as a specific tool for policy implementation analysis, a tertiary intention in this thesis work is also to use the 5C Protocol, in order to test the utility of applying this framework to climate change adaptation activities (RQ3).

[3] Participatory observation was achieved, as I was involved in various aspects of the MDGF Knowledge Management activities. For example, in attending online sessions and discussions (August 2011 – May 2012), and personal meetings in Kenya (January 2012) and Ecuador (February to March 2012), with various personnel involved in the MDGF environment and climate change window.

As a preliminary step, the elements of the theoretical framework were reviewed from the perspective of the needs of analyzing climate change adaptation. This resulted in some adjustments of its original elements and structure.

The initial step was the clarification of terms. Firstly, there is potential for confusion with the term 'context' as used by Najam (1995) in his framework. In light of my own understanding of context, which is quite broad (see my definition in the box on the right), all of the 5Cs to some extent refer to this concept. In the 5C framework, however, 'context' refers solely to the institutional framework/boundaries within which a policy is implemented, which is a fairly narrow interpretation of this broad concept.

- **Context:** the specific conditions which characterize a defined setting - made up by the social, ecological, and historical etc. characteristics. This also includes scale-specific conditions.

For clarification, the name 'context' in the 5C Protocol was for the purposes of this research changed to 'institutional corridor' (a term which Najam also uses in his paper), while maintaining the same definition, for the sake of clarity. The names and definitions for the remaining four Cs (content, commitment, capacity, and clients and coalitions) are used largely as is, with minor adjustments made to broaden the scope of the definitions (please refer to Table 1 below).

Secondly, a conceptual gap was identified in using the 5Cs for this thesis work. Given that climate change adaptation activities are inherently context-specific, this includes environmental, as well as social, political and institutional contexts. The 5C framework, as is, does not lend itself to an explicit focus on the ecological context, as the different factors were developed based largely on policy implementation, hence focusing mostly on an institutional dimension. While this focus is essential, for on-the-ground activities, there is a need to bring added emphasis to the environmental dimension of context and implementation activities. An additional factor – environmental conditions – was thus added to the Najam's 5C Protocol for the purpose of analysis in this thesis work (please see Figure 2 below). This modified framework is hereafter referred to as the '5C+ Protocol'.

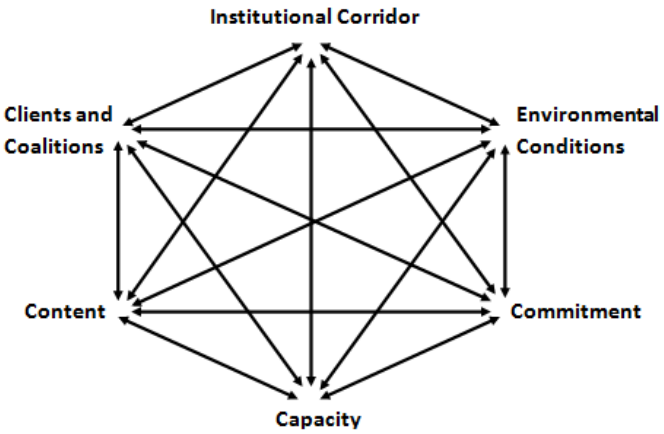


Fig. 2: 5C+ Protocol

The additional factor will allow the analysis of JP experiences to explicitly take into account the relationship between environmental conditions and all of the other factors in the original framework. This will contribute to two major aims. The first is to explore the relationship between environmental conditions and the choice and performance of adaptation activities (thus seeing

whether and how a JP intervention has responded to environmental context). The second is to test the utility of using the basic form of the 5C Protocol framework, and its application and utility in analysing climate change adaptation interventions specifically (i.e. going beyond the scope of policy implementation only).

Lastly, for clarification, the definitions of all of the six factors used in this thesis analysis are found in Table 1 below.

Table 1: Factor Definitions

Institutional Corridor	The institutional environment through which policy and activities must travel, which also provides the boundaries for specific implementation activities.
Content	The content of a policy or program is three-fold: what it sets out to do (i.e. goals); how it problematizes the issue (i.e. causal theory); and how it aims to solve the perceived problem (i.e. methods).
Commitment	The commitment of those entrusted with carrying out implementation, at various levels.
Capacity	The capacity of implementers' to carry out the changes desired by the policy, program or activities – this includes both human and financial resources.
Clients and Coalitions	The groups or individuals whose interests are enhanced/threatened by the policy and/or program, and the actions they take in response to its implementation either to support or block.
Environmental conditions	The environmental characteristics (elements, state, dynamics, challenges and opportunities) of a given geographical location.

2.2. Case Study

The MDGF environment and climate change case study was chosen to serve as a microcosm of how international institutions such as the UN are able to address and deliver outcomes on climate change adaptation. The 5C+ Protocol was used as the basis for analysing the chosen case studies (see Chapters 4 and 5), and developing general recommendations (Chapter 6). The institutional background, characteristics and rationale for selection of the case study are overviewed in this section.

2.2.1. Delivering as One

In 2005 at the World Summit in New York a High-Level Panel on UN System-Wide Coherence was conceived, given the mandate to investigate UN system reform and build upon several years of investigation. While acknowledging the essential work of the UN, the initial report of this panel stated:

> "the UN's work on development and environment is often fragmented and weak. Inefficient and ineffective governance and unpredictable funding have contributed to policy incoherence, duplication and operational ineffectiveness across the system. Cooperation between organizations has been hindered by competition for funding, mission creep and by outdated business practices." (UNSG HLP 2006, p.1)

The final recommendation of this panel was to enter a new era, with the overarching aim of overcoming systemic UN fragmentation (UNSG HLP 2006). It was here that 'Delivering as One' was born, officially launched by the UN's former Secretary General in 2006 (MDGF 2011a). A primary objective of this new reform was to enhance the ability of the UN to harmonize and deliver results, particularly relevant for issues which cut across different mandates and require greater coherence (MDGF 2011a). Climate change is thus a key issue addressed by the new reform.

The proposed Delivering as One reform was initially divided into two main levels. First, at the country level, the consolidation of all UN agencies to work under one office and budget, and direct partnering with the government. Second, at the headquarters level, one consolidated board (of all the merged specialized agency boards) who would oversee the One UN country offices (UNSG HLP 2006). This proposal represents a significant shift from existing UN processes, where all specialized agencies – both in-country and at headquarters level – work largely autonomously, except perhaps on specific programs for which they choose to partner together. The proposal for Delivering as One can therefore be seen as somewhat radical, however it targets most of the criticisms and weaknesses in the UN system to date, particularly with respect to environment and development interventions (UNSG HLP 2006).

Based on these recommendations, the first pilot phase of Delivering as One began in 2007, premised on four principles: One Leader; One Budget; One Program; and One Office (UNDG 2010). Eight countries were initially chosen as pilots, with future country pilots also planned. Although not without its challenges, the Delivering as One initiative has also inspired additional programs, such as the MDGF, which are being implemented in the 'spirit' of Delivering as One (also known as "One UN").

2.2.2. MDGF

The MDGF, based on a funding contribution of the Spanish government to the UN system, was established in 2006 to advance international efforts towards the achievements of the MDGs (please see the full list of MDGs in the box on the right, Source: UN 2010). Through the MDGF, a total of 128 programs are being delivered in 49 different countries (MDGF 2011b). While the MDGF programs are delineated by the mandate of the individual MDGs, the implementation of the programs are in the spirit of the One UN:

> "all MDG-F financed programmes build on the collective strength of the UN, bringing several agencies together to address issues that cut across the mandate of individual organizations. The MDG-F is thus at the forefront of the UN Reform process, making a significant contribution to the UN's efforts to deliver as one." (MDGF 2011b)

Not only are the MDGF programmes aiming to enhance intra-UN coherence and harmonization, but another guiding principle of the programmes is national ownership and leadership (MDGF 2011a). The majority of the programmes are also multi-level and multi-sectoral, thus contributing to both vertical and horizontal coordination within and between UN agencies and national counterparts.

The 7th MDG, concerned with 'environmental sustainability', and is being addressed through the 'environment and climate change' window of the MDG-F. Under this window, 17 Joint Programs (JPs) are being implemented (please see Figure 3 below for their geographical distribution), with UNEP as the main coordinating body. The majority of the JPs are engaged in national climate change mainstreaming activities, as well as field-level climate change adaptation activities. It is the experiences of these JPs that form the basis of analysis for the case study in this thesis work.

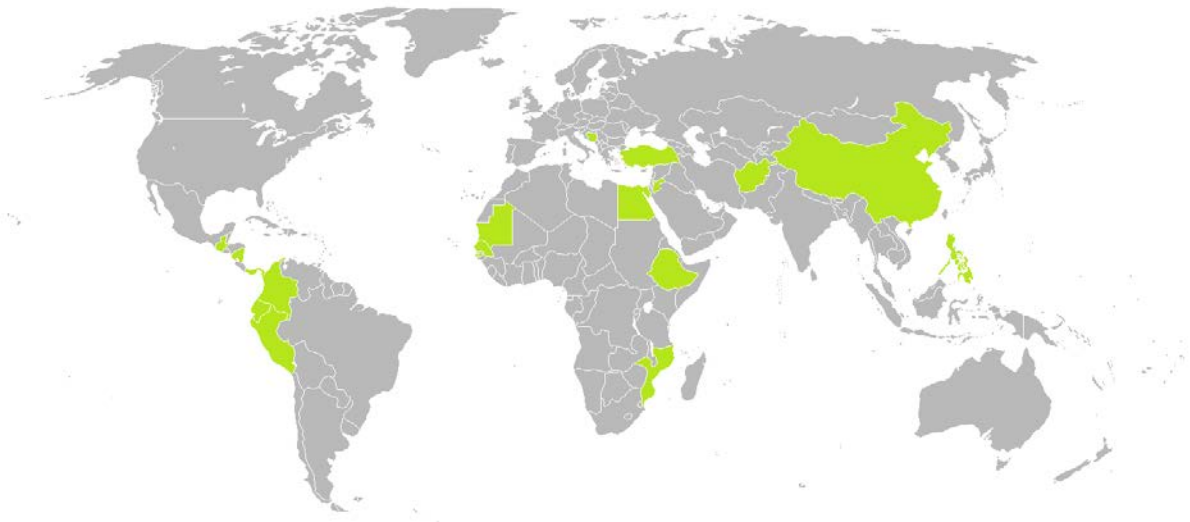


Fig. 3: Geographic distribution of JPs under the environment and climate change window
(Image Source: adapted from WikiCommons 2005)

2.2.3. Knowledge Management

The MDGF is also engaged in a concurrent Knowledge Management (KM) program, with the aim of sharing and utilizing valuable experiences and knowledge gained through the inter-agency and inter-sectoral collaboration, occurring through the implementation of JPs. The KM activities are coordinated overall by a team which represents the whole range of MDGs.

As part of the KM program, the UNEP team has an interest in collecting valuable 'lessons learnt' from the various JPs, which can then be used for current and potentially future work in similar areas of intervention. Through these KM activities, the hope is to improve the functioning and effectiveness of MDGF efforts, but also act as a knowledge network and platform for future climate change-specific activities (MDGF 2011c).

The imperatives of climate change adaptation activities, coupled with their relatively short histories of practice, points to an important role for capturing high quality lessons and experiences to improve future interventions in the field. Additionally, within the shifting paradigm of more cooperative environmental governance (Armitage et al. 2008), the JPs are valuable objects of study about how partner institutions can address changing environmental concerns together. The experience of the JPs can also showcase how the UN itself is able to reform in the face of mounting institutional challenges, and the effectiveness of initiatives such as Delivering as One, in addressing complex issues such as climate change.

2.2.4. Case Study Selection

The case study – the JPs conducting their activities under the environment and climate change window of the MDGF – was chosen first based on the characteristics of the JPs, and second based on the opportunity to investigate the programs from 'the inside'.

The JPs have a broad set of characteristics that collectively make them an ideal case study for this thesis work. As part of a common global program and based upon a common mandate, the MDGF JPs are reasonably similar, allowing a good basis for analyzing the differences as well as similarities amongst their experiences. Moreover, the wide geographical scope also allows regional differentiation, and the very different nature of each of the countries also allows a basis for seeing how the country-specific programs were able to adapt the broad mandate of the MDGF environment and climate change program to the specific context they were working in. These characteristics can allow the results of the JP work, and the lessons that emerge from their joint experiences to be broadly applicable to a wider scope of climate change adaptation interventions.

The basis of the JPs – that they form part of the Delivering as One initiative – also make this an ideal case study candidate, to firstly see how a collection of UN agencies based in a given country are able (given their broad influence) to adequately address climate change interventions, but also how the Delivering as One concept plays out in practice, in the specific area of climate change adaptation. The results of this case study research can be of use not only to a UN or MDGF audience, but also more broadly to international organizations engaged in collaborative climate change adaptation activities.

Lastly, access to the JPs was possible through an arrangement between the UNEP MDGF KM Secretariat and the International Institute for Sustainable Development (IISD), represented by Dr. László Pintér my thesis supervisor. This arrangement with IISD involves providing expert advice to the MDGF environment and climate change window on substantive issues related to adaptation, and also in the identification of lessons learnt. Through this connection I was able to collaborate with the MDGF KM team internally, and gain access to information and key persons. This allowed the data gathered and used in this thesis work to be of a significant quality and quantity, facilitating greater understanding of both the JPs' and the MDGF KM Secretariat's work. This ability to work 'from the inside' has been key to the data collection, analysis and development of final recommendations.

2.3. Data Collection

The data used in this thesis work was collected using a variety of methods, ranging from a targeted review of the literature, to a review of MDGF documents, observation of selected JP communications through virtual presentations and dialogues on specific JPs, and in-depth interviews with selected JP representatives. Input to the thesis methodology and results was also provided by experts, such as from the IISD, and others involved in the field of climate change adaptation.

2.3.1. Literature Review

The literature review was performed first to advance a general understanding of the study area, and also some of the challenges faced in the implementation of climate change adaptation activities. The literature review covered peer-reviewed journal articles, edited books, reports by non-academic research organizations, as well as UN documents. The topics under investigation were quite broad, given the complex nature of the focus problem and analysis undertaken. The key topics covered by

the literature review are: the science behind climate change and its effects; responses to climate change (adaptation and mitigation); vulnerability; adaptive management; international environmental governance; evaluation; and institutional learning. The summarized literature review is found in Chapter 3.

2.3.2. Primary Data

The collection of primary data was made possible through internal access to the MDGF environment and climate change window. The KM team is actively trying to share the experiences amongst the JPs engaged in similar activities, and also share the JPs' experiences beyond this specific program. As a result, there are various sources of primary information on the work of the JPs, which has formed a rich basis for the understanding and analysis of their work.

The primary data sources are as follows:

- **Lessons Learned** – in the attempt to not only share, but also learn from experiences, each of the JPs have been asked to submit lessons learned from their work. These lessons are meant to be: clear about their context; evidence-based; and replicable to other contexts.
- **Weeks in Focus** – over a one-year period, the KM team has also initiated a series of interactive forums for the JPs to share their individual experiences with each other. The Weeks in Focus are an online forum, where the 'focus' is either a country or theme for the week. Selected representatives make their presentations through a live online portal, which are attended by JP workers, partners and external experts, who all engage in discussion after the presentations.
- **Performance and Evaluation Reports** – the JPs have several reports that they must create periodically, aimed particularly at the MDGF Secretariat who monitor the performance and progress of the different JPs. These reports, particularly the evaluation reports, have rich information about the JP work, including specific challenges faced.
- **Personal discussions** – I have had the opportunity to engage in personal discussions with several actors in the MDGF and specific JPs. This has been through a variety of methods, including email, Skype discussions, and face-to-face meetings in Kenya and Ecuador. All of these personal discussions have served greatly to advance my knowledge of the JP work, and also of the general topic area being researched.

2.3.3. Interviews

The interviews also belong in the category of primary data, however their significant contribution to the thesis research and analysis render them deserving of separate explanation. The interviews comprised of two levels. The first was interviews conducted with JP representatives, and the second level was interviews conducted with external climate change/adaptation experts to validate the results of the JP interviews and analysis.

The first level of interviews was conducted between February and April 2012, primarily in person but also online. A mid-term workshop for all of the JPs in the environment and climate change window was held from 27 February to 2 March, 2012 in Ecuador. This workshop was organized by the UNEP KM team, with the purpose to share knowledge and experiences.

During this workshop, I interviewed selected individual representatives of the JPs according to a semi-structured interview format, based on the 5C+ Protocol. Later, I also conducted online interviews over Skype. The content of these interviews formed the basis of factor analysis, which is briefly described in the section below and elaborated upon in Chapter 4.

The interview format was developed in mid-February 2012, prior to the workshop. The aim was to ask general, open-ended questions which alluded to the different 5C+ factors in turn. The expectation was that during the course of answering the individual questions (each of them being based on a specific factor), that interviewees would also allude to other factors – thus providing a basis for also analysing the relationship between different factors. This was a direct attempt to follow the spirit of Najam's framework, by identifying "the strength and influence of each variable on specific implementation efforts as well as to identify critical linkages between them" (Najam 1995 p.36).

The interview questions were reviewed for their clarity and 'open-endedness' by Dr. Tamara Steger, a professor at the Central European University and qualitative research expert. The aim was to create a sense of comfort for the interviewees, to allow them to be open in answering the questions and also elaborate on the different points they found important. Follow-up (sub) questions to each main question were also developed, in case the interviewees did not directly answer the primary question. Primary interview questions by factor are found in Table 2 below, and the full interview format can be found in Appendix A.1.

Table 2: Primary Interview Questions

Content	Tell me about the general issues the JP aimed to address
Environmental Conditions	How would you describe the environmental conditions the JP was dealing with?
Institutional Corridor	Could you describe how things were organized and administered through the JP?
Capacity	What opportunities and/or challenges were there in terms of the JP administration?
Clients and Coalitions	Was anyone (individual, organization, or other group) particularly influential?
Commitment	Tell me about how the JP has or hasn't been supported by different responsible parties.

In total, 12 interviews were conducted according to this format, representing 10 countries. The majority of interviews were conducted in English, but with three JP representatives (from Colombia and Peru), they were conducted in Spanish with translation provided by Dr. Pedro Bidegaray, from the University of Minnesota's College of Food, Agricultural and Natural Resource Sciences. The interview times ranged from 30 minutes to one hour, and a rich amount of information on the JPs was gained from these sessions. All of these JP interviews were transcribed before analysis.

The second level of interviews was conducted with selected adaptation experts. The purpose of these secondary interviews were to validate or cross-check the results which derived from the primary interviews and analysis (described further in the following section).

2.4. Analysis

The analysis of data had two main levels. The first was the analysis of primary interviews according to the 5C+ variables, using a qualitative data analysis software. The second level was verification of the results of primary interview analysis, through document review and further expert interviews.

The transcribed primary interviews were uploaded to ATLAS.ti, which is a qualitative data analysis program. The interviews were coded manually by factor, and then these codes were analysed quantitatively according to their strength and relationships to one another. The summarized results of the coded interviews, and the aggregated results as depicted by the 5C+ Protocol, are found in Chapters 4 and 5.

Stemming from the interview results, a 'fact sheet' summarizing the thesis methodology, initial results, and preliminary recommendations based on these results, was sent to selected experts in the adaptation field.

Based on the fact sheet, these experts were then asked for their reaction to the method and results. The input of the discussions with the experts was used to determine general validity or relevance of the thesis research and recommendations. The input of three experts (István Bart, Livia Bizikova and Andrea Deri[4]) was incorporated into the final analysis. Elaboration of their input can be found in Chapters 5 and 6.

Note that throughout the process of the thesis work, advice and inputs were also provided by experts who were already involved in the MDGF environment and climate change window, namely Kati Autere (UNEP KM Coordinator), Jim Perry (IISD Associate) and László Pintér (IISD Senior Fellow and Associate).

[4] Details of these experts can be found in the Reference section, under 'Personal Communications'.

"the physical conditions in different ecosystems are changing,
and peasants are not adapting as fast as the ecosystem changes"
Interviewee, 2012

Chapter 3: Literature Review

This chapter is a general overview of the key issues that have relevance to this thesis work. The chapter is divided as follows. First, a brief history summary is provided of the science and implications of climate change, with discussion of responses, human impacts and potential management of climate change adaptation. Second, is an overview of international environmental governance, its history, and relation to climate change. The role of evaluation and institutional learning in addressing the challenges of climate change adaptation form the concluding sections of this chapter.

3.1. The Changing Climate System

Scientific evidence has verified that the Earth's climate is undergoing rapid changes, caused by human interference (Hansen et al. 2008, Shakun et al. 2012 and IPCC 2007). The history of the Earth's climatic system is characterized by oscillating glacial and inter-glacial periods, or ice ages (UNEP/GRID 2007). While we are currently in a naturally warm period, based on historical geological data there are significant differences between our current inter-glacial state, and those of the past (Shakun et al. 2012). The main differences are in greenhouse gas (GHG) levels, alterations in land cover, and temperature change.

The amount of GHGs being injected into the atmosphere by a combination of human activities, such as the burning of fossil fuels and land clearing, has led to an unprecedented increase in atmospheric GHG levels (IPCC 2001 and MEA 2005). (See Figure 4 below).

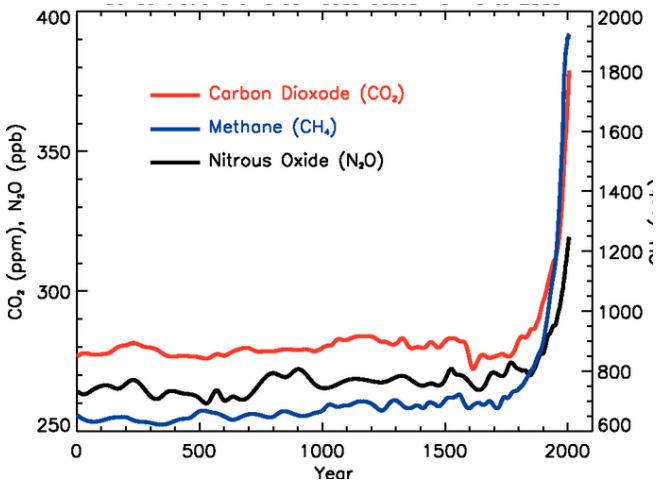


Fig. 4: Concentration of Greenhouse Gases from 0 to 2005, Source: IPCC 2001

The combined effects of increased GHG concentrations and changes in land cover result in an increase in global surface temperatures (IPCC 2007). While global temperatures are also characterized by oscillations, historical data has shown an unprecedented increase in average temperatures, even taking natural fluctuations into account (IPCC 2007, Figure 5).

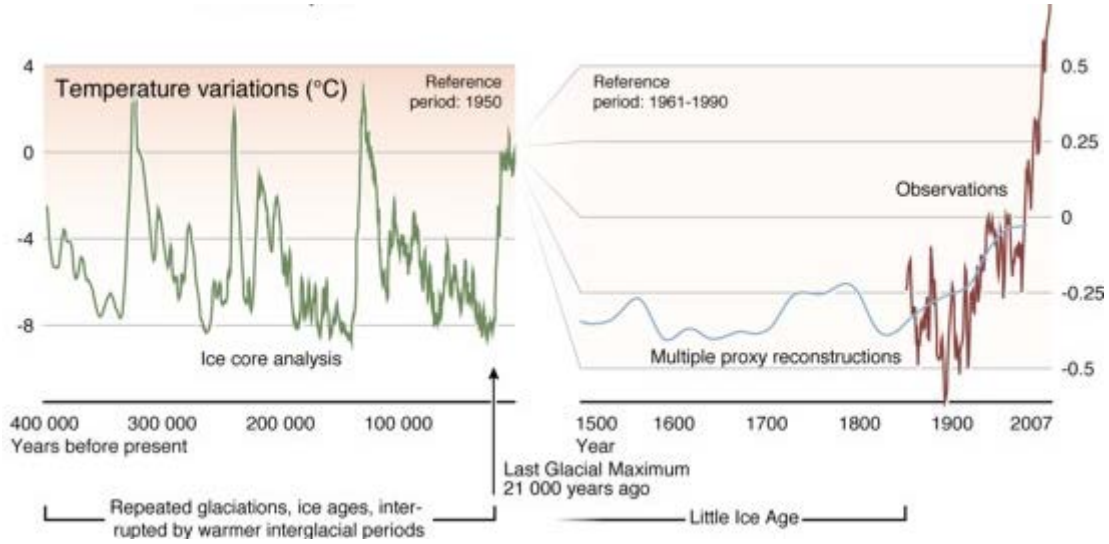


Fig. 5: Historical Trends in Temperature, on a Geological and Recent Time Scale, Source: UNEP/GRID 2007

These trends of increasing GHGs and temperature are expected to increase in the future, thus pointing to heightened climatic change, and the necessity to adapt to these changes (IPCC 2007).

The expected results of anthropogenic climate change are as follows (Pittock and Jones 2000):

- **Temperature changes** – a general increase in temperature, with more seasonal fluctuations and/or extremes
- **Enhancement of the hydrological cycle** – increased temperatures will lead to greater evaporation, and rainfall will increase as a result, but not uniformly.
- The combination of changes in temperature and rainfall are expected to lead to **more extreme climatic events** such as drought, flood and cyclones
- **Sea-level rise**, caused by a combination of effects including melting glaciers and thermal expansion of the oceans.

The extent and nature of these effects will differ significantly both spatially and temporally. Also, climate change futures are characteristically uncertain, depending on various influencing factors as well as the potential for non-linear changes, including tipping points in the climate system (Lenton et al. 2007). Anticipating and responding to climate change therefore necessitates various responses, which take into consideration both physical and non-physical phenomena, as well as these complexities and potential non-linearities.

3.1.1. Responding to Climate Change

When the international community first recognized climate change as a potential threat, the initial response was to limit the release of GHGs into the atmosphere. This response – known as 'mitigation' – has dominated the field of climate change (IPCC 2007, Füssel 2007 and Dang et al. 2003). It is now accepted that climatic changes are already underway, thus necessitating 'adaptation' measures as well. Definitions of these terms are found in the box below to the right (Source: IPCC 2007).

There are numerous reasons for the focus on mitigation both in the scientific and policy arenas of climate change. These are: reduction in GHGs has global benefits, of which the effects are predictable and quantifiable; mitigation generally applies the polluter-pays principle; and adaptation benefits are generally applied locally, whereby the impacts and benefits of interventions are not as easy to quantify or assess (Füssel 2007).

- **Mitigation:** 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:** Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.

Moreover, due to historical emissions of GHGs, developed nations have been the major contributors, and are responsible for the majority of GHG emission reduction targets under the international climate change regime and the principle of 'common but differentiated responsibilities.' [5] Consequently, the international climate change regime has therefore predominantly focused on finding the most cost-effective ways to achieve GHG reductions (Olmos 2001).

Although there have been tremendous strides with respect to mitigation at the global level, data on atmospheric concentrations has shown that the level of GHGs, despite international reduction commitments, are still increasing (IPCC 2007). This is due not only to the failure of developed countries to decrease their emissions overall, but increasingly the contributions of so-called 'emerging' economies such as China, India and Brazil are having significant impacts (Le Quéré et al. 2009).

Current concentrations of GHGs have already reached levels that many consider unsafe (Hansen et al. 2008), and climate changes are already being observed (IPCC 2007). The necessities to implement adaptation measures are therefore growing.

Traditionally there has been resistance to introducing adaptation into the international climate change regime. This is due first of all to the scale and governance of adaptation, which typically takes place at local to national levels. This makes it difficult to coordinate or harmonize efforts at an international level (Füssel 2007, Meadowcroft 2010). Additionally, there is also a perception that diverting attention to adaptation would not only be an admission of defeat (for mitigation efforts), but would also channel limited resources away from mitigation activities (IPCC 2007). However, such perceptions are changing due to several reasons:

- Due to historical emissions of GHGs and ***inertia in the climate system***, even cutting all GHG emissions today would still mean that climate change is inevitable, necessitating adaptation measures to be made now and in the near future (IPCC 2007).

[5] The principle of 'common but differentiated responsibilities' refers to the differentiated levels of responsibility faced by developed and developing nations in the pursuit of sustainable development. Within the climate change regime, this is often referred to based on the principle of historical emissions of greenhouse gases, whereby although all nations are viewed as having a common responsibility to tackling the problem of climate change, developed and developing countries have varying levels of responsibility to cut back emissions based on these historical emission trends. (Alhaji 2003).

- The ***inequitable distribution of climate change impacts***, due to historical responsibility for emissions and the occurrence of future negative impacts (Kasperson and Kasperson 2001).
- Growing acceptance that ***adaptation and mitigation are not mutually exclusive*** options, and that synergies between the two are necessary to also consider (Dang et al. 2003, Füssel 2007, Meadowcroft 2010).

Developing nations especially, who are those set to be most hard-hit by and have the least capacity to respond to the impacts of climate change, have been championing the need for adaptation on the international agenda. This is being complemented by a growing focus on adaptation by the research and development assistance communities as well.

3.1.2. The Human Face of Climate Change

While the effects of climate change will be felt worldwide, the distribution of impacts will vary significantly. The effects of climate change described previously – temperature change, rainfall variation, extreme climate events and sea level rise – are all physical phenomena. Yet the *impacts* of these phenomena, particularly within human systems, are inherently non-physical:

> "While rainfall, droughts and floods are physical phenomena, associated socio-economic consequences (economic failure, food shortages and out-migration) are linked to the ability of affected populations to anticipate, prepare for and respond to these events." (Schipper and Burton 2008, ps. 118-119)

For example, the Intergovernmental Panel on Climate Change (IPCC) has projected the various impacts of climate change. However, in the IPCC projections, the extent of these impacts is dependent upon various non-climatic stimuli, for example related to different development trajectories which could be taken, including changes to economic systems and population growth. These different projections allude to the significant impact of socio-economic factors in the enhancement of the climate change effect (due to mitigation failures), and the specific impacts this can have (dependent upon adaptation capabilities). Although precise predictions of climate change impacts are difficult to project, general trends are expected (Table 3).

Table 3: Projected Climate Change Impacts by Continent (IPCC 2007)

Continent	Projected Impacts	Adaptive Capacity
Africa	• Between 75 million and 250 million people expected to face increased water stress by 2020. • Yields from rain-fed agriculture to be reduced by up to 50% by 2020.	Low
Asia	• Decreased freshwater availability and increased population growth will affect more than one billion people by 2050. • Up to 20% increase in crop yields in East and South-East Asia; decrease of up to 30% crop yields in Central and South-East Asia by 2050.	Low
Australasia	• Intensified water security problems by 2030. • Declined production from forestry and agriculture by 2030.	High
Europe	• Decreased water availability and crop production in Southern, Central and Eastern Europe • Mixed effect in Northern Europe – increased crop yields, but also greater ecosystem instability.	High

Continent	Projected Impacts	Adaptive Capacity
Latin America	• Lower crop productivity due to water stress and soil salinization. • Increased risk of flooding.	Low
North America	• Increased crop yields by 5-20%. • Increased high temperature extremes.	High
Polar Regions	• Reduced heating costs for Arctic communities, but significant threats to local/indigenous ways of life	Low
Small Islands	• Significant effects of sea-level rise • Significant reduction in water resources by 2050	Low

As seen in Table 3 above, there are significant predicted impacts of climate change and populations who will be largely negatively affected. In Asia alone, up to one billion people will face impacts from water scarcity. These figures are all based on impacts which will be faced *regardless of today's reductions in GHG emissions*, showing that some effects of climate change are simply inevitable. Yet the extent of these impacts and the degree of harm they can cause are alterable to varying extents, being dependant on adaptive capacities (IPCC 2007, Adger et al. 2009).

3.1.3. Vulnerability

From above, it can be seen that there are some populations who face a greater threat from human-induced climate change. Moreover, it also recognized that those areas and groups who are at greatest risk from climate change, are also those already under significant stress due to both environmental and socio-economic factors (Kasperson and Kasperson 2001). This highlights the challenge of adaptation to climate change, which for many social groups are of greater necessity and relevance than mitigation measures. Beyond human populations, there are also different levels and degrees of threat to other organisms, both flora and fauna. This particular discussion, however, will remain limited to the scope of threats to human adaptation to climate change forms the basis of this thesis work.

- **Vulnerability:** the extent to which climate change may damage or harm a system; vulnerability is a function of not only the system's sensitivity, but also its ability to adapt to new climatic conditions.

The ability to adapt to climate change is said to be a function of different system characteristics (Olmos 2001). A key concept which has emerged is that of vulnerability, which links the climatic and socio-economic faces of climate change together. A commonly referenced definition of vulnerability is found in the box to the left (Source: Kasperson and Kasperson 2001).

Vulnerability has emerged as a key concept in the adaptation field, due to the growing recognition that understanding the meaning and impacts of climate change increasingly require an integrated approach which moves beyond the hitherto scientific focus of climate change assessments to date. While such scientific studies are necessary, which help to determine the magnitude of physical impacts related to climate – precipitation, temperature, water etc. – the realization and extents of these impacts are related to non-physical factors (Schipper and Burton 2008).

Within the adaptation literature, other key concepts and terms related to vulnerability include: sensitivity, resilience and adaptive capacity. Definitions are found in the box to the right (Source: Olmos 2001).

- **Sensitivity:** the degree to which a system is affected by, or responsive to, climate stimuli.
- **Resilience:** the degree to which a system rebounds, recoups or recovers from a stimulus.
- **Adaptive Capacity:** the potential or capability of a system to adapt to (to alter or better suit) climatic stimuli.

Vulnerability as a concept, however, will be limited in its utility to address climate change issues, without an attempt to understand why some groups are more vulnerable than others. For this reason, a historical perspective is warranted.

According to generally accepted measures such as Gross Domestic Product (GDP) or the Human Development Index (HDI), living standards have increased dramatically over the past century. Yet GDP and HDI only tell part of the story, as these gains have come with high costs, unevenly distributed amongst social groups and ecosystems (MEA 2005). The history of agriculture, human settlement, industrialization, colonization and resource extraction, and today's global political economy can all be linked to a self-perpetuating system of economic and social power being accrued to the hands of few. This concentration of power, has led invariably to the current situation where, in the face of certain threats – be it due to climate or weather variabilities – some are much better equipped to deal with potential catastrophes than others.

The concept of vulnerability provides the link between issues of climate change and the historically-bound determinants of socio-economic marginalization. The fact that different countries, regions, economic sectors and social groups vary greatly in their ability to respond to the effects of climate change is due to two main factors (Olmos 2001):

- Climate change effects will be distributed unevenly worldwide
- Wealth and resources are also unevenly distributed

Hence, some groups are more 'vulnerable' to climatic changes. Vulnerability, whether present or future, should be understood as a function of socio-economic status, which indicates the degree of access to resources, the degree of exposure to environmental hazards, and thus the capacity to respond to stresses (Kelly and Adger 2000, Olmos 2001, Ribot et al. 1996).

The concept of vulnerability has primarily been used in the field of natural hazards, and has subsequently been adapted into the climate change arena. As defined in the natural hazards field, vulnerability is:

> "the capacity to anticipate, cope with, resist, and recover from the impact of a natural hazard." (Blaikie et al. 1994, referenced in Kelly and Adger 2000)

Although a separate field, natural hazards also has relevance to climate change. This is due not only to conceptual parallels, but also the fact that those vulnerable to climate change are also highly correlated with those vulnerable to existing climate variabilities, such as in semi-arid regions subject to drought, or low-lying lands subject to flooding (Olmos 2001). These important linkages have also been highlighted by the IPCC (IPCC 2000, cited in Olmos 2001):

> "Decreasing the vulnerability of socio-economic sectors and ecological systems to natural climate variability through a more informed choice of policies, practices and technologies will, in many cases, reduce the long-term vulnerability of these systems to climate change."

This point is particularly pertinent in the face of uncertainties about the specific predictions of future climate change. While often, climate change science has been criticized for its levels of uncertainty, arguably this is simply a moot point. Exact and accurate predictions may be impossible to attain, but expected general trends are accepted widely in the scientific community.

From the perspective of the "person on the ground" – those vulnerable to both climate variability and long-term climate change – climate impacts are in the present, not just a future possibility. The introduction of 'no regrets' policies – i.e. interventions which address climate variabilities, but at the same time can be applicable to future climate change adaptation (regardless of specific impacts) have been highlighted in the adaptation literature (Schipper and Burton 2008). Vulnerability can thus be seen not only as an essential concept in addressing climate change impacts and adaptation, but also a cross-cutting tool to enhance adaptation to both climate variability and long-term climatic changes.

The inclusion of vulnerability into the field of climate change has been heralded by many as an indication of the shift away from purely technical assessments, which although necessary, do not include the necessary complexity to fully address climate change impacts (Füssel 2007).

However, given that the issues of vulnerability are complex, to be adequately addressed this requires conceptual frameworks to aid understanding (Turner et al. 2003). There is a need to recognize not only the interactions between ecological and social systems, but also the fact that vulnerabilities arises from different spatial and temporal scales, which can also be characterized by various non-linear processes (Turner et al. 2003). However, there is also a danger in being lost in such complexities. For practical purposes, Pintér (2005) created a simplified version of a commonly used vulnerability framework (adapted from Turner et al. 2003), which can help to guide analysis (Figure 6 below). Such frameworks explicitly take into account the interaction between social and ecological systems to determine vulnerability, as well as external effects or influences on the place-specific area of intervention.

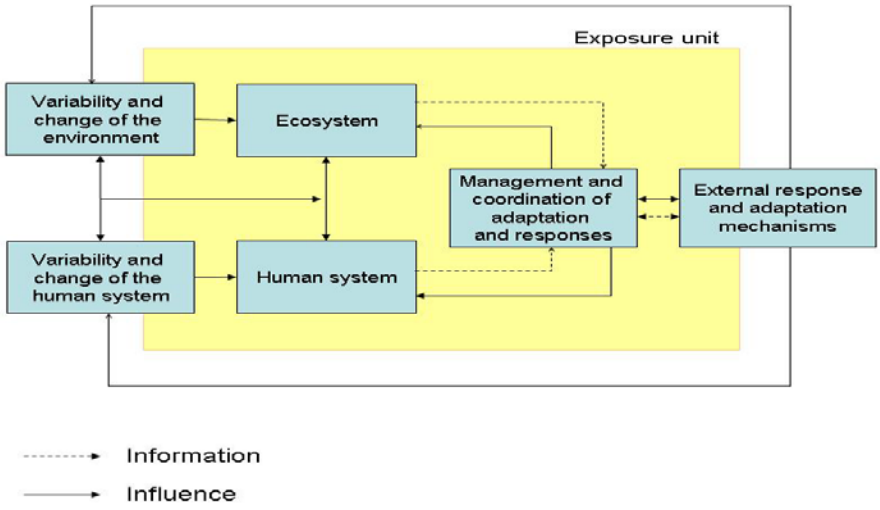


Fig. 6: Vulnerability Framework, Source: Pintér 2005

Conceptual frameworks such as the one above, help to guide the analysis of climate change and vulnerability away from a strictly ecological analysis. The questions of how to address climate change are inherently political, they are inherently socio-economic (Turner et al. 2003), and failing to address such root causes and influencing factors will be a failure of the ideals of the vulnerability approach. Moreover, the vulnerabilities of people are inherently context-specific (Kasperson and Kasperson 2001), hence adaptation options must not only be linked to the ecological context, but also the specific socio-economic context of particular people and places. Thus, for informed policy making, both climate impact assessment as well as vulnerability assessments are necessary, and neither on their own are sufficient (Ribot et al. 1996).

3.1.4. Managing Change and Uncertainty

Given the complexities and uncertainties inherent in climate change, and necessary adaptation to these changes, there is a clear need to develop innovative and alternative management approaches which are fit to deal with these characteristics (Peterson et al. 1997, Barg and Swanson 2005). Traditionally, management approaches have been based on predictable futures, leaving little room for uncertainty or surprise. However, in the era of unprecedented environmental changes, new approaches are necessary.

Building on the field of integrated ecosystem management (Tompkins and Adger 2003), a growing focus is now on adaptive management to deal with the diverse and multi-level complexities of problems such as climate change adaptation. Such adaptive management is juxtaposed against conventional management approaches, which tend to be based on certainties and are inflexible, as opposed to adaptive approaches which embrace uncertainties and are responsive to change (please see Table 4 below).

Table 4: Conventional vs. Adaptive Management (Barg and Swanson 2005)

Conventional	Adaptive
Seek precise predictions	Uncover range of possibilities
Build prediction from detailed understanding	Predict from experience with aggregate responses
Promote scientific consensus	Embrace alternatives
Minimize conflict among actors	Highlight difficult trade-offs
Emphasize short-term objectives	Promote long-term objectives
Presume certainty in seeking best action	Evaluate future feedback and learning
Define best actions from obvious alternatives	Seek imagination in new options
Seek productive equilibrium	Expect and profit from change

As can be seen from the above table, the mindset for adaptive management differs quite significantly from conventional management settings. There are therefore significant shifts that must occur from conventional systems to be able to appropriately incorporate such adaptive management ideals, and therefore deal with the complex challenges of climate change. Not only management practices themselves, but there is also a need for a wider shift in institutions and policies to incorporate such adaptive thinking, and thus deal with changing circumstances and even suprises (Barg and Swason 2005).

To help aid this shift towards adaptive management, a number of conceptual frameworks have also been proposed. One example is proposed by Swanson et al. (2004), which is based on the strategic management of sustainable development interventions (please see Figure 7 below).

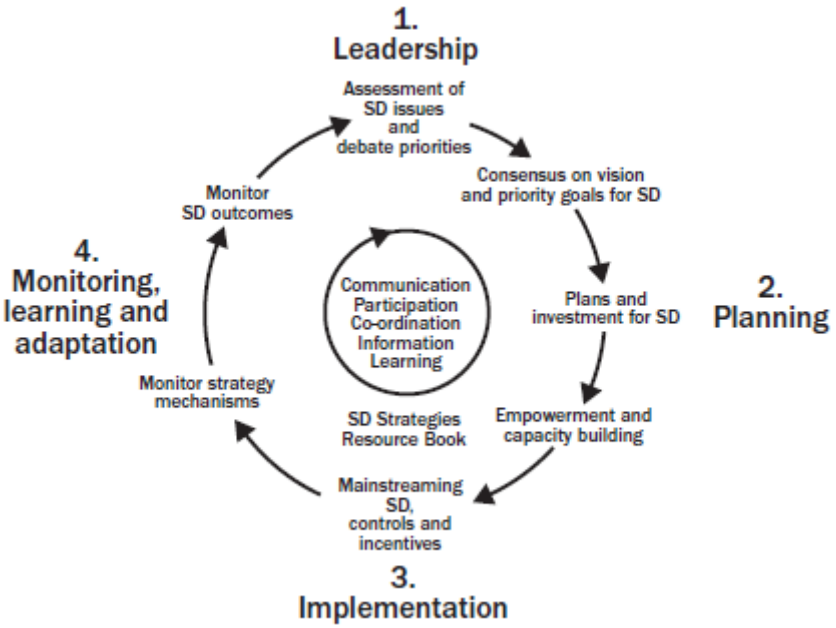


Fig. 7: Adaptive Management Cycle, Source: Swanson et al. 2004

This framework has applicability to the management of climate change adaptation, as it is based on complex, cross-scale and multi-level issues which require coordination and recognition of various influencing factors. Swanson et al. (2004) argue that the success of such interventions is reliant on four key factors: leadership; planning; implementation; and monitoring, learning and adaptation. These factors are juxtaposed against a continuous improvement approach for sustainable development strategies (the circular arrows in Figure 7 above). Conceptual management frameworks such as this one are clearly needed to help guide interventions in a new approach towards coordinated, collaborative, and adaptive management approaches.

Being characterized by experimentalism, multi-scale analysis and context sensitivity (Barg and Swason 2005), the adaptive management of climate change is not only new, but sometimes also at odds with existing traditional management practices. However, adaptive management must be incorporated into existing institutional and governance mechanisms in order to yield effective and timely results for those most threatened by the impacts of climatic change.

3.2. International Environmental Governance

From the above sections it is clear that global environmental change, and specific issues such as climate change, are imminent and need to be addressed. However, these issues are complex and multi-layered, necessitating not only robust scientific bases, but also thoughtful and in-depth understanding of related socio-economic processes, to foster appropriate remediation of the issues. These characteristics pose significant challenges to existing institutional and governance structures (see definitions in the box to the right, Source: Gupta et al. 2008), which are not typically geared towards addressing such complexities.

- **Institution:** A formalized body with established patterns of rules and decision making.
- **Governance:** Formalized patterns decision making and implementation engaged through both state and non-state actors.

Numerous institutions have emerged over the past decades to address global environmental problems, and despite many notable achievements worldwide, questions still remain as to the effectiveness of such institutional growth and their interventions. This section briefly overviews the history of global environmental governance, with a focus on the key challenges of the governance of climate change. It outlines the key players, issues of fragmentation, and ends with a discussion of evaluation and learning as a starting point of how some of the institutional and governance weaknesses highlighted could be redressed.

3.2.1. History

The story of international environmental governance has its strongest roots starting from 1972, at the UN Conference on the Human Environment (UNCHE) in Stockholm (DeGarmo 2005). The UNCHE brought together delegations from all over the world, for the first time to discuss emerging issues of environmental degradation which were becoming all the more apparent as a result of increased resource extraction, industrialization and human population growth. It was recognized that the previous bilateral approach to tackling environmental issues – for example addressing transboundary pollution incidents – was increasingly unfit to deal with the complex and growing challenges of the age. A major achievement of the UNCHE was the creation of UNEP, the primary international body addressing environmental problems (Halpern 1992).

Post-Stockholm, there has been an incredible increase in international environmental awareness and actions aimed at addressing various forms of environmental degradation. There has also been the creation of many more institutional bodies, at the international, regional, national, local and even multi-scale levels (Bulkeley and Newell 2010). Despite this plethora of institutions, however, we are faced by a paradox:

> "on the one hand, there has been a tremendous growth in the number of international institutions to deal with environmental issues; on the other hand, the environment continues to deteriorate in many parts of the world" (Andresen 2001, p. 19)

It has been increasingly pointed to that the increase in institutional numbers and complexity has in fact led to additional problems of duplication of work, erosion of responsibilities and a lack of coordination (Andresen 2001, Gupta et al. 2008). These problems of fragmentation are also leading to a waste in resources – problems unfortunately not limited to the environmental field only.

Albeit new, and some would say even greater, environmental challenges exist today, a key question remains as to how and in what ways the international regime is fit to deal with the existing and emerging challenges of climate change governance.

3.2.2. Synergies: Environment, Development and Climate Change Governance

In the early days of the international environmental movement, there was often a perceived conflict between environmental and developmental goals (DeGarmo 2005). With the advent of 'sustainable development', a term coined by the Bruntland Commission in 1987, countries from the Global North and South were able to rally around a common ideal which linked both environment and development (Najam 2005).

- **Sustainable development:** development which meets the needs of current generations, without compromising those of future generations. Based on three pillars of: economy, society and environment.

- **Environmental mainstreaming:** the inclusion of environmental concerns into the decisions and institutions that drive national and sectoral policy, rules, plans, investment and action.

The synergies between environment and development have been recognized and increasingly translated into governance practice. This can be seen for example in the advent of environmental mainstreaming (please see definition box to the left, Source: Dalal-Clayton and Bass 2009), which has been identified as a key component to achieve development goals in an ecologically sound manner. Environmental mainstreaming activities have become an integral part of development interventions, for example being integrated into Poverty Reduction Strategy Papers, thus helping to institutionalize concepts such as sustainable development.

The governance of climate change has adopted a similar strategy to the general governance of environmental issues. With respect to climate change adaptation specifically, the synergies to overall development goals have also been recognized. Thus there is increasingly a linkage between environment, development and climate change governance.

However, the particular nature of climate change poses significant governance challenges (Meadowcroft 2010):

- ***Societal reach*** – addressing climate change causes and effects will require significant societal changes, in almost all sectors and levels of society.
- ***Scientific uncertainty*** – there are high degrees of uncertainty as to specific effects of climate change, including those about 'tipping points' which can lead to cascading, irreversible effects to the climate system.
- ***Distributional and equity linkages*** – climate change impacts will be distributed unevenly across the globe, and there are significant equity issues associated with both cause and effect.
- ***Long time frames*** – existing governance mechanisms are short-term in nature, while effectively managing climate change inherently requires a long time frame, not subject to short-term political trade-offs.
- ***Global implications*** – the causes and impacts of climate change are global, yet coordinating international responses are a significant challenge.

While other policy and governance issues have similar characteristics, he argues that other issues rarely display all of these features together and to the same extent (Meadowcroft 2010).

Other significant challenges associated are with the governance of climate change. In part, this is due to the cross-cutting nature of climate change, which, as alluded to above, invariably affects all segments of society. By extension, the majority of economic sectors will also be affected. As such, the governance of climate change cannot be externalized to a singular body, but rather as an issue it also intersects with the governance of many key resources and sectors such as energy, water, agriculture and land use (Bulkeley and Newell 2010). Not only across different sectors, but climate change governance must also consider the interaction between different scales and levels of societies and ecosystems (Cash et al. 2006). This complexity requires coordination, harmonization, and long time frames to an extent that the majority of national and international institutions are not accustomed to (Gupta et al. 2008). The majority of governance institutions have also developed over time, and in response to specific issues, making them generally conservative and resistant to change

(Meadowcroft 2010). Moreover, political cycles tend to be short (around 4 years on average), while societies are locked into long-term production and consumption patterns based on infrastructure and societal values (Gupta et al. 2008), thus making it hard to break these existing patterns. The novel and complex nature of climate change, makes governance of this specific topic even more challenging.

With respect to climate change adaptation specifically, governance is typically seen at the regional, national and sub-national levels (Füssel 2007, Meadowcroft 2010). This is due to the fact that adaptation options are inherently place-specific, and while the climate change focus at the international level has remained predominantly focused on mitigation, localized recognition of the threats of climate change impacts have led to more autonomous adaptation responses (Füssel 2007). However, the international arena is shifting focus again and now also recognizing the imperatives of adaptation. When shifting focus towards adaptation, however, the international level must be cognizant of the danger in failing to recognize the complexities inherent in cross-scale interactions. This includes failing to recognize heterogeneity within or between levels (Cash et al. 2006), when downscaling international climate change aims to place-specific adaptation needs. There must be adequate consideration, therefore, of context-specific needs.

Similar to the linkages of environment and development as described above, the synergies between climate change adaptation and sustainable development are also being capitalized upon. There is now a new push towards mainstreaming not just environment, but specifically climate change adaptation, into development policies and processes (Dang et al. 2003).

As a result of this increased international recognition, funding from international bodies is now becoming available for climate change adaptation, particularly with linkages to development aims. However, there is also a concurrent movement which questions such funding mechanisms, as it is foreseen that this new focus can divert funding away from what are seen as more 'essential' needs such as health and education in developing country contexts (Füssel 2007). In the international climate change regime, therefore, a key concept of 'additionality' has emerged: this requires that funding for climate change adaptation be additional to existing development assistance, and not merely a re-labelling of development measures. This is not only to ensure adequate funding, but also because of the key point that vulnerability to climate change is unlikely to be addressed simply through cookie-cutter development interventions (Füssel 2007). Another challenge which must be considered is how climate change adaptation measures are identified and implemented on the ground.

It can be seen that the synergies between environment, development, and climate change, while often complementary, do not always exhibit positive feedback loops (Dang et al. 2003). Moreover, the governance of climate change posits unique challenges, both at the international and more decentralized levels. How existing institutions are able to address these challenges is a key question in developing appropriate responses to the imminent threats of climate change, and the need for adaptation.

3.2.3. Key Players

Since the birth of UNEP, the UN system has been the key mechanism through which environmental institutions, governance, and activities are realized at the international and national levels. However,

numerous related and independent institutions have also emerged in the past several decades as well. There are a diverse range of players who have a stake in international climate change governance, ranging from formalized UN bodies such as UNEP, to multilateral environmental agreements and their related implementation bodies, to global financing facilities, and most recently formalized international civil society organizations.

UNEP

As previously mentioned, UNEP is the key international institution addressing environmental issues. The initial mandate of UNEP was to serve as a coordinator among other institutions addressing environmental issues, and it was not meant to be a programme initiating organization (Andresen 2001).

Despite its mandate to operate as a principle coordinating body, UNEP has been limited to operating as a program plagued with limited resources and irregular funding (WRI 2003), as UNEP is funded through voluntary contributions by member states (DeSombre 2006). These funding issues affect UNEP's ability to engage in long-term planning. Additionally, in recent years UNEP has been under greater pressures to deliver national programs, which is specifically outside its mandate, thus further straining its modest resources. Given that UNEP is facing increasing challenges in the task of coordinating the vast network of environmental institutions, there have been calls for major institutional reform, for example upgrading UNEP to a UN Environment Organization (Simons 2011). Whatever the future form of UNEP, however, the key challenges for international environmental governance are of coordination and ensuring real action is taken on the ground, and UNEP will undoubtedly still play a key role in this realization.

UNDP and FAO

The United Nations Development Program (UNDP) also plays a major role in sustainable development more generally, and is a key actor in the implementation of the MDGs, of which the 7th goal is concerned specifically with improving environmental sustainability (WRI 2003). The Food and Agriculture Organization (FAO) is also noteworthy, as a specialized UN agency whose focus is on food security, agricultural productivity and rural development (FAO 2012). Just as the 'environment' cannot be separated from other issues such as health or social development, the expanding range of environmental portfolios being carried out by agencies such as the UNDP and FAO are key to addressing issues of environmental degradation. However, this also highlights some of the challenges which arise from coordination and the potential for duplication or contradictory interventions.

UNFCCC

The United Nations Framework Convention on Climate Change (UNFCCC) is an international treaty which was signed at the Earth Summit in Rio de Janeiro, 1992. The ultimate aim of the UNFCCC is "to stabilize greenhouse gas concentrations at a level that would prevent dangerous anthropogenic (human induced) interference with the climate system" (UNFCCC 2012). The UNFCCC is supported by a permanent secretariat, and the Parties to the Convention meet annually to discuss progress on the Convention and its legally-binding instrument, the Kyoto Protocol. The UNFCCC functions as a largely

independent body, even though UNEP was key to the creation of the international climate change regime and the creation of UNFCCC itself (Andresen 2001). This raises questions of coordination potential and also highlights some of the politicized nature of the UN system, which is itself characterized by turf wars over responsibility areas.

The UNFCCC is the most high-profile climate change body at the international level, garnering much media and political attention. However, it is also a highly politicized body, dependent upon the inputs and interests of national representatives, meaning that progress is often slow and targets weak.

While focused primarily on mitigation measures, the UNFCCC also has a stake in and important influence on climate change adaptation, through its influential agenda setting role, as well as specific mechanisms such as the Adaptation Fund.

IPCC

The IPCC was set up by UNEP and the World Meteorological Organization (WMO) in 1988. The IPCC is a scientific body whose aim is to "provide the world with a clear scientific view on the current state of knowledge in climate change and its potential environmental and socio-economic impacts" (IPCC n.d.). While they do not conduct the scientific work themselves, the IPCC reviews and assesses relevant scientific studies. Governments endorse final IPCC reports, and by doing so they acknowledge the authority of climate change science, making the content of these reports very relevant for climate change policy (IPCC n.d.). The IPCC has played a key role in advancing the scientific evidence of climate change, and today continues to be the leading international authority on climate change science.

Since the publication of the IPCC's Second Assessment Report, there has been an enhanced and increasing focus on the imperatives of climate change adaptation. As a bridging mechanism which represents both scientific and political consensus, the IPCC plays an influential role in bringing new issues to light and also encouraging the direction that national governments and international institutions take in their responses to climate change. As such, the emphasis on adaptation is increasing, and supported by a strong scientific consensus.

OECD

The Organization for Economic Cooperation and Development (OECD) is an intergovernmental forum whose stated mission is to "promote policies that will improve the economic and social well-being of people around the world" (OECD 2011). As a leading international body focused largely on economic and trade issues (OECD 2011), the OECD has an influential role to play in setting international agendas and also influence member states to adopt certain strategies or goals.

Through the OECD's Development Assistance Committee (DAC) and the Environmental Policy Committee, beginning in 2006 there was an agreement to begin integrating and mainstreaming environmental issues into national development policies and poverty reduction strategies (IPCC 2007). Moreover, there was an additional declaration signed which specifically mandated DAC work to integrate climate change adaptation into their development assistance.

International Financial Institutions

International financial institutions such as the World Bank and the International Monetary Fund (IMF) have influence on the climate change field both directly and indirectly. For example, the World Bank has a significant impact on the state of the environment internationally, both indirectly through its development activities, and directly through its environmental portfolio (WRI 2003). Institutions such as the World Bank and the IMF have a huge influence on which projects and development trajectories are put in place in developing countries – and thus the environmental, and climate change, impacts of these interventions.

More specialized bodies such as the Global Environment Facility (GEF), established by the World Bank in 1991, today serves as the world's largest financial body providing funds for environmental projects (GEF 2010). After the Rio conference in 1992, GEF was restructured and became an independent institution outside of the World Bank system (although the World Bank still plays an administrative role), now functioning as a private financing body (GEF 2010). GEF has several partner agencies including UNEP, FAO and the UNFCCC, and yields great influence on the realization of environmental interventions through its funding allocations.

Civil Society and NGOs

International NGOs and civil society groups are having a growing influence at the international level of environmental and climate change governance. High profile international NGOs are increasingly given a voice in the formation of international policy and regimes (WRI 2003). Moreover, established international bodies such as UN agencies are turning to such groups as implementing partners, to translate policy into real action on the ground. Such interactions continue to change the face of international environmental governance, and increasingly the implementation of climate change adaptation activities.

3.2.4. Fragmentation

There are a vast number of institutions and interests at play in the governance of environmental issues at the international level, which is in part a reflection of the complexity of environmental issues. On one hand, it is not surprising that problems of institutional fragmentation and lack of coordination have developed – particularly when one looks at the weaknesses inherent in a body such as UNEP, for example, which although officially mandated with an international coordinating role, has been severely constrained in its ability to fulfill this mandate. However, on the other hand, the urgency of environmental and climate change problems have not diminished – rather, they are increasing as we speak – so a key question remains as to how these problems of international environmental governance can be redressed. How can we ensure that the threats of global environmental change can be both adapted to and mitigated? The reform of our international institutions to improve effectiveness will be just one part of the puzzle.

Taking the UN system as a key starting point for reform, we can refer to an internal UN review which found that:

> "institutional fragmentation and loss of policy coherence as a result of the number of separate environmental intergovernmental processes had resulted in a loss of effectiveness of the work of the United Nations in the area of environment" (UNGA 1998)

These glaring institutional weaknesses point to the need for increased coherence and coordination, to avoid a duplication of efforts, and also ensure the more appropriate management of resources and guarantee that higher-level political decisions such as those made in the UNFCCC are translated into actions on the ground, and do not remain limited to false or empty promises. With respect to climate change, issues of fragmentation are even more enhanced due to the cross-cutting nature of the issue (Meadowcroft 2010, UN 2008).

The UN has taken a number of steps to try and improve coordination and coherence as evidenced by the new Delivering as One reform discussed in Chapter 2. However, significant challenges still remain.

3.3. Improving Understanding and Practice

Key avenues for improving the understanding and practice of climate change adaptation interventions, and avoiding duplication of efforts, are through improvement of evaluation and institutional learning mechanisms.

3.3.1. Evaluation

The overarching purpose of formal policy or program evaluations is to identify success and failure of particular interventions, firstly to generate information about results attainment, and secondly to identify factors that contribute to success (Wallace et al. 1995). While evaluation practice has traditionally focused on the former, i.e. looking strictly at results or outputs, more complex problems such as the expanding development agenda and climate change, have spurred a new emphasis on more comprehensive and coordinated evaluation approaches that also emphasize learning (Morra-Imas and Rist 2009).

In its most basic form, evaluation can be categorized into three types (Morra-Imas and Rist 2009):

- Prospective – conducted prior to the start of a program or policy, on its likely effects.
- Formative – conducted during implementation, with a focus on processes.
- Summative – conducted at the end of an intervention, to determine results achievement.

More specifically, there are numerous evaluation frameworks which have been developed to help guide policy and program evaluations. These include, among many others: the International Development Research Centre's Outcome Mapping model (Earl et al. 2001); the Most Significant Change Technique (Davies and Dart 2005); the UNDP's Handbook on Planning, Monitoring and Evaluating for Development Results (UNDP 2009); the Canadian International Development Agency's Evaluation Guide (CIDA 2004); and the Poverty Action Lab's Randomized Impact Evaluation methodology (J-PAL n.d.). While each of these vary in their methodologies, it is generally accepted which frameworks are the best fit various purposes (World Bank 2011).

All aforementioned types of evaluation have applicability to a vast array of interventions, including those focused on climate change adaptation. However, the particular nature of climate change adaptation, given its complexities and degrees of uncertainty, make evaluation in the field especially

challenging (Conrad and Nielsen 2011, Hedger et al. 2008). In particular, this is due to the existence of potentially shifting baselines, due to the unpredictability of climatic changes, and also due to the sensitivity of climate change adaptation to other related conditions such as economic and social changes (Conrad and Nielsen 2011). Such characteristics raise questions to the utility of using 'tried and tested' conventional evaluation approaches, which tend to rely on fixed baselines and assumptions of influencing factors, in the field of climate change adaptation.

To date, most of the literature on evaluation of climate change adaptation has been focused on determinants of 'success' – i.e. how to define if an adaptation intervention has been successful according to a pre-defined set of criteria. There is therefore a significant emphasis on summative evaluations, particularly driven by the fact that this is a new field and there is pressure from governing bodies and donor communities to ascertain that specific interventions will yield cost-effective results (Hedger et al. 2008). However, the fact remains that:

> "due to the early stages of most adaptation activities, there are no tried and tested practices that can be used as benchmarks for assessing new activities, and the effectiveness of ongoing adaptation activities will only be put to the test in the future" (Conrad and Nielsen 2011, p.1).

While the evaluation of climate change adaptation measures can build upon existing methodologies, for example those used in development evaluation, these still must be adjusted to the specific features and challenges of climate change (Hedger et al. 2008). Thus, although there is an identified need for rigorous evaluation methods to determine 'success' in climate change adaptation interventions, owing to the context-specific nature of these activities, the long-time frames of the issues at hand, and the relatively young history of practice, summative evaluations and success criteria are still in their infancy. The role of prospective and formative evaluations is thus particularly important for climate change adaptation, as the determinants of success criteria will take some time (and more interventions) to be tested and verified.

In response to these methodological challenges and information gaps, various academics and practitioners have investigated which evaluation frameworks or methodologies have greatest relevance to the climate change adaptation field. These include preliminary determinants of climate change adaptation success[6] (which it is emphasized will have to be reviewed based on more practice and evidence) and the characteristics of the evaluation carried out.

With respect to the characteristics of the evaluation procedure, Huitema et al. (2011) have identified three key features that climate change adaptation evaluation must incorporate: the complexity (including non-linearity) of climate change issues; reflexivity of goals (including the open questioning of evaluation and/or policy goals); and lastly, the participatory nature of evaluation to not only incorporate different perspectives, but also to encourage learning processes. These recommended features are indicative of the complex nature of climate change adaptation evaluation, and the need

[6] Preliminary success determinants of adaptation identified by the GEF include: ability to minimize scientific uncertainty, ability to alter community perceptions and behaviours towards climate change adaptation; and ability to incorporate the cross-cutting nature of climate change, through mainstreaming into other systemic structures (Conrad and Nielsen 2011).

to account for a variety of factors which may not be accounted for in more traditional evaluation frameworks.

It should be noted here that the framework chosen to guide analysis in this thesis work – Najam's 5C Protocol – derives from this general literature on policy assessment and evaluation. While not geared specifically towards climate change adaptation evaluation, it has a general applicability to the analysis and prognosis of policy implementation measures generally, and environmental policy implementation specifically. It also has utility in all three types of evaluation – prospective, formative and summative – thus can be used at varying levels and time frames of analysis.

Moving away from a solely results-based orientation, increasingly an identified role of evaluation has been its potential contributions to lesson learning (Hedger et al. 2008). While communication channels have been a key factor identified to help spread lessons generated from evaluations, the evaluation field specifically has been limited in this regard. Thus a key question remains: once evaluation results are generated, in what ways are they being used to improve interventions, by facilitating learning within and across programs and institutions?

3.3.2. Institutional Learning

It has become an increasingly recognized phenomenon that organizations generally are fraught with 'learning disabilities' (Senge et al. 1994), which act as barriers to the institutional adaptations necessary to keep abreast of changing internal and external circumstances. This recognition has led to a plethora of work in the fields of institutional and/or organizational learning, which aim to highlight the enabling conditions for organizations to be able to learn. The UN is no stranger to this institutional learning movement, and has actively engaged in processes which try and enhance institutional learning, both within and between the various bodies who have stakes in a cross-cutting issue.

However, even well-meaning efforts to adopt institutional learning processes, are often fraught with an inherent inability to define or clarify the meaning, intentions or specific processes for institutional learning (Patton 2001). There has been a "paradox of learning": despite recognition of the normative value of learning for institutions, there is a deficiency in specifications for its attainment (Armitage et al. 2008). Before blindly adopting the use of these terms, institutions must engage in a process of explicitly defining what they mean by institutional learning, and the ways by which these could be potentially used or incorporated into subsequent institutional aims or processes.

Numerous studies have linked institutional learning theory to applications in the environmental field, of direct relevance to the reform of environmental institutions. Drawing upon the work of Argyris and Schön (1978) as well as Bateson (1972), Siebenhüner and Arnold (2007) provide differentiation between types and levels of learning. These are: single-loop; double-loop; and triple-loop (or 'deutero') learning. Single-loop learning results in changes in process/outputs, being limited to an operational level. Double-loop learning goes beyond this, as it implies a higher order of reflection which then leads to changes in objectives and corresponding actions. Deutero learning takes a much more holistic view, as it implies overarching changes to be made in an organization's own learning processes (i.e. learning to learn).

Pelling and High (2005) find that the common thread in all three levels of learning, is in the definition of learning as resulting in some sort of behavioural change – with behaviour defined "in the widest

sense as that which learners do" (p.6). From this, it can be seen that 'institutional learning' would not be limited simply to, for example a report on lessons learnt from a program, but rather that the learning process itself would lead to some kind of behavioural change. Therefore, a real test of how institutions such as the UN are actually learning from experience, would be to see the extent to which behavioural change does or could occur.

A general message from such studies which apply institutional learning theory to environmental interventions, is the need to counteract the paradox of learning – especially in the face of environmental challenges. While many learning processes and methods to date have had successful applications, these have tended to be in fields with a tendency for predictability. In contrast, environmental challenges are characterized by high levels of uncertainty, especially so with respect to climate change where both scientific uncertainty and levels of risk are potentially quite high (Giddens 2009; Tschakert and Dietrich 2010). The existence of complex vulnerabilities makes the importance and impetus for successful learning quite high – and the need to adequately address learning challenges in order to counteract the paradox found in many institutions.

In the case of collaborative environmental management/governance, the existence of multiple actors with different and sometimes competing interests, methods and values makes the ideal of 'learning' even more complex.

Nonetheless, the concept of institutional learning is an important one which can be applied to the reform of institutions such as the UN and its specialized bodies such as UNEP. In light of the many challenges and criticisms faced by the international environmental governance regime to date, and the fact that climate change is upon us, it is clear that not only is institutional reform necessary, but also that actions taken to address problems of climate change must be done so in the most effective way possible. Moreover, the fact that climate change is a cross-cutting policy issue makes not only governance, but also learning, even more challenging (Meadowcroft 2010). The specific features of climate change which make it such a 'wicked' policy problem (Huitema et al. 2011) should not be downplayed, but rather targeted measures should be taken to enhance learning in the field. A gap in this field is clearly present:

> "With respect to climate change, there is no rulebook or agreed 'best practice' manual on governance that can serve to transfer lessons from one country to another" (Meadowcroft 2010 p. 7)

Actions in the climate change arena can thus benefit from cross-learning – pooling knowledge of diverse experiences together, and making use of the limited resources (and time) available for addressing pressing environmental concerns.

3.4. Piecing the Puzzle

As can be seen from all of the above discussions, the growing threat of climate change make adaptation a major governance challenge. While the imperatives of climate change adaptation are increasingly recognized, the processes by which adaptation can be successfully achieved are difficult to identify, due to the complexities of socio-ecological systems that serve as the theatre in which the physical and institutional processes related to adaptation take place.

International environmental governance, although desiring to address the needs of climate change adaptation, must find a way to appropriately target these issues in a manner that takes into account different scales and levels, and is context-specific, while also enhancing cross-learning to make the most out of short time frames that we have to act.

While there is a global institutional framework for mitigation with some binding commitments (in principle) and market mechanisms (through the UNFCCC, carbon trading markets etc.), there is no similar framework for adaptation. Although the importance of adaptation is recognized by the international community and there are some international coordination and funding mechanisms, there is no 'one size fits all' solution. As countries and regions have different exposures and adaptive capacity, adaptation is left to be dealt with at that sub-global level. Despite this, there are some common patterns of vulnerability and climate change impact, and therefore there can also be common patterns of successful adaptation processes and activities. Understanding of what these are is important for those on the frontline of local adaptation efforts, but also by international efforts that are trying to assist the countries and regions where the gaps between adaptation needs and adaptive capacity are the widest.

Questions remain, of how we can assess policy and programme effectiveness and learning in the field of climate change adaptation, to see how institutional mechanisms can adapt to these growing challenges. The remaining chapters of this thesis use the case study of the MDGF environment and climate change programmes to try and answer these questions.

"indigenous people are not owners of the land, but children of the land.
And for that reason, land cannot be sold or traded –
because you don't sell your own mother."
Interviewee, 2012

Chapter 4: Interview Results

This chapter provides a synthesis of the results of interviews conducted with selected JP coordinators between February and April 2012. A total of 12 interviews were conducted, representing ten of the 17 national JPs under the environment and climate change window of the MDGF. The countries in this sample are: Bosnia and Herzegovina, China, Colombia, Egypt, Ethiopia, Jordan, Mauritania, Mozambique, Peru, and Turkey (Figure 8 below).

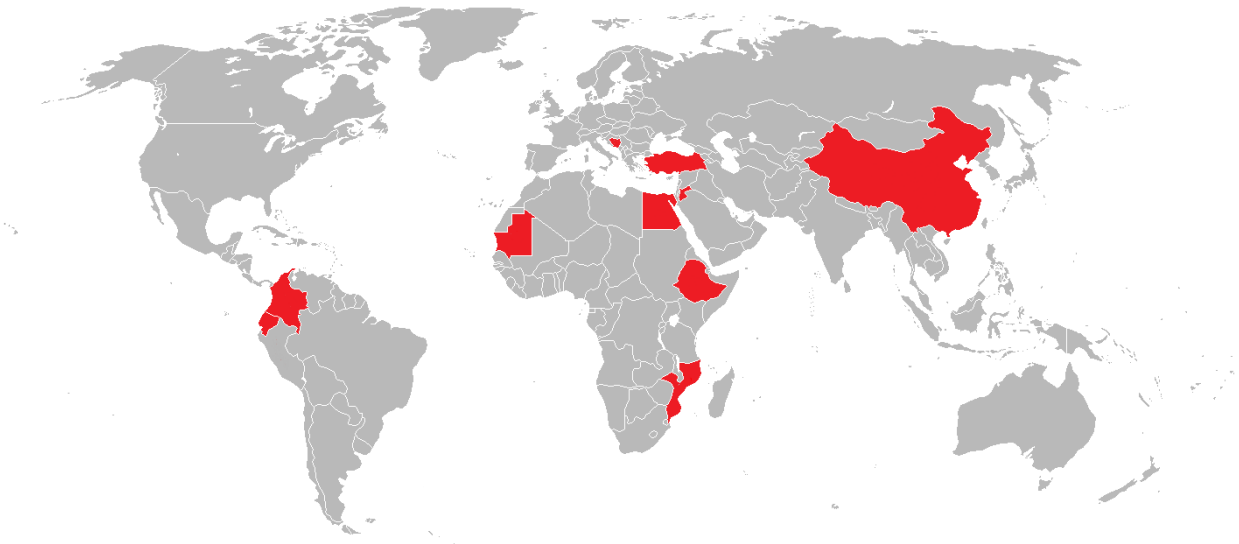


Fig. 8: Country JPs in the Interview Sample
(Image Source: Adapted from WikiCommons 2005)

Each JP representative was interviewed according to a semi-structured format. The interview questions were inspired by each of the six factors from the theoretical framework: content; institutional corridor; commitment; capacity; clients and coalitions; and environmental conditions. The interviews ranged in duration from half an hour to one and a half hours. All of the interviews were transcribed, and then coded in relation to the six factors. The results of all of the JP country interviews are synthesized in this chapter according to the six variables.

Unless otherwise indicated, all of the quotations in this chapter come directly from the interviews. For confidentiality purposes, names have not been used.

4.1. Content

According to Najam's (1995) definition of content, this variable includes three distinct entities:

a) goals;
b) causal theory (how the issue is problematized); and
c) choice of methods to solve perceived problem(s).

These three entities were taken into account during the interviews, and results displayed accordingly in this section.

Quantitatively this variable appears very often in the interviews with the second highest total count of 60, after the variable of clients and coalitions, which has a total count of 65. This is in large part due to the broad nature of this variable – comprising the three aforementioned entities – and because there was emphasis in the interviews on discussing not only the methods chosen by each of the JP, but also the process they took to identify both problems and potential solutions, i.e. causal theory.

4.1.1. Goals

The goals of all of the country JPs were quite similar, all falling under the general mandate of the MDGF environment and climate change window. According to the MDGF website, the environmental programmes are dedicated to:

> "achieving MDG 7 on environmental sustainability particularly the target of integrating the principles of sustainable development into country policies and programmes, and reversing the loss of environmental resources.
>
> Our work embraces the recent discourse on climate change emphasizing its impact on poor people thereby ensuring that our initiatives remain inextricably linked to issues of poverty and inequality" (MDGF 2011d)

Stemming from this broad mandate, in practice, each of the JPs typically have two components. The first is on mainstreaming environmental issues and/or climate change into national and sub-national policies and practices. The second is concerned with implementing field level climate change adaptation projects – typically these are first-phase pilot programmes. In the majority of cases, these components are heavily linked with human development and poverty alleviation aims, as alluded to in the quote above. At the policy level, for example, mainstreaming in many cases is related to development initiatives. At the field level, often the climate change adaptation activities are linked to vulnerable groups or target areas, selected based on criteria such as low development levels and poverty.

Based on the broad aims of the MDGF's environmental mandate, from the interviews it can be seen that most of the JP goals have been adapted according to the specific needs or concerns of the country in question. These country-specific adaptation measures resulted either from previously identified needs, or from close consultation with country representatives. In the Egypt JP, for example, during the preparation of the initial programme document (which defined the overall goals of the JP prior to implementation), the government was included in the dialogue from an early stage in order to ensure alignment with national priorities:

> "the UNDP… consulted with the government on what are the priorities of the government, and how we can help address [these] as well as address the climate change issues in conjunction with that." [sic]

In other cases, it was assumed that the issues or overall goals were generally accepted, thus the JP simply aimed to address these based on widely accepted norms. In the design of the Mozambique

JP, for example, a specific target area – the Chicualacuala district – was chosen for field interventions, based on existing country priorities. In this case:

> "the problems [were] quite well known by government and international agencies at the time of project design. So we're just taking those knowns, and tried to frame the best approach possible to alleviate the situation." [sic]

In many cases, they built upon these 'knowns' through existing documentation, and the specific project goals were then identified in a participatory process, particularly emphasized for the field level projects. One example is in Mauritania, where the JP began the programme design stage through an initial document review – for example poverty and environmental profiles – to determine target areas and general goals for these areas. Following this was:

> "consultation [with] all the people coming from the targeted areas from those documents… during the consultation we verified if really the data we have in the documents are true… So that was how we identified first the area, and second now we identified the activities we would like to implement." [sic]

Lastly, in the example of Colombia, an explicit goal of the JP has been focused on indigenous peoples:

> "The program was designed from the beginning to work with indigenous communities… Because the regions that were environmentally important, and those that were in danger, were the areas where indigenous peoples live. And also because they are neutral in terms of the civil war, and because they are getting killed – by both sides." [sic]

As shown by this quote, there are numerous influencing factors which determined the overarching goal of the Colombia JP, not just the state of environment or climatic changes. The social, political and historical factors also had a role to play in determining the area of focus, and thereby determining subsequent methods to identify causes and solutions.

Under this entity for content, therefore, it can be seen that the identification of goals for each JP was quite different in each case as they were specific to the country situation and/or identified target area. However, they remained true to the overarching mandate of the MDGF and in all cases at the goal level linked environment and climate change with very specific development aims.

4.1.2. Causal Theory

How the identified issues have been problematized (causal theory), and solutions consequently chosen, has in most of the JP cases been linked to a series of baseline studies and/or participatory assessments. A key commonality between most interviews was the use of vulnerability assessments at the start of the programme, which were then used to identify key areas (both geographical and sectoral) to focus adaptation efforts. In many cases scientific studies were included, such as general circulation model (GCM), watershed assessment and so forth. Other types of baseline studies included stocktaking assessments of existing data and/or strategies, and climate impact assessments. Taking from these baseline studies, the identification of remediatory measures was often the next step. However, the process of both conducting these studies and how the results were used in the selection of project activities differed quite significantly between the various JPs.

Overall, the JPs have identified a causal theory by using baseline studies, relying on expert/scientific knowledge, as well as the inputs of local or indigenous groups and communities. In some cases, these two approaches have been combined.

Building on the previous example of Colombia, this JP chose an innovative method of identifying problem causes and remediatory strategies, based on an integrated partnership between scientific and indigenous knowledge. This partnership is based on two principles; first, "to embrace the idea that everybody knows something – but at the same time, everybody knows nothing", and second, "to work based on what gets us all together" – i.e. emphasizing commonalities, and not differences. Through this, a common ground was developed in which selected local peoples were trained to conduct their own vulnerability assessments and later monitoring of adaptation activities. However, this training was not simply one-sided, but rather was based on the mentioned two principles, where a collaborative 'training' method was created based on information from both scientific experts and local knowledge.

Although the Colombia JP's very participatory nature of addressing the issues led to significant time delays in programme execution, this nonetheless contributed to ensure high levels of commitment from all involved parties. Additionally, the continuity of the climate change adaptation activities is also highly probably, through enhanced understanding and capacity levels of community members.

On the other hand, some JPs chose to take a less participatory approach in problematization of issues, as broad stakeholder involvement was not deemed necessary. In the case of the Jordan JP, for example, the first phase of the programme was dominated by scientific studies such as the downscaling of GCM results to the region, with only limited input from relevant stakeholders. During the second phase of the program, however – the implementation of pilot projects – there was a change in focus towards higher participation of local communities.

A final point is that, in some cases, baseline studies did not have as much influence as originally intended. This was due to a number of reasons such as time or logistical delays. For example, in the Mozambique JP, they had a large focus on community-based climate change adaptation projects. To initiate this process:

> "we did a series of what we called baseline studies… But quite a lot of those studies took a long time to initiate, just because of recruiting consultancy teams, companies – and in the meantime we were under a lot of pressure from the district government and the communities to actually start doing things. So at the end of the day I feel like those studies did not get to influence as much as they should have, because the selection of the adaptation options that we ended up implementing… actually happened in a pretty ad-hoc way."

These issues raised in the quote above relate to constraints in program design, where time constraints created a barrier to utilizing completed baseline studies. During the course of the mid-term workshop in February in Ecuador, this was a point raised multiple times, where it was deemed that the program design and initial implementation stages were very rushed, thus creating barriers to various sources of input, whether from technical studies or from participatory arrangements. It

was suggested that a 6-month interim design/adjustment phase be built into future programs, in order to counteract these constraints.

As can be seen from the above examples, there were a variety of methods employed by the JPs to identify specific local issues and how these problems could be conceptualized, although with various associated challenges. These methods were not only linked to the overarching goals of the country JPs, but also have undoubtedly had a great influence on the activities chosen to address the identified problems.

4.1.3. Chosen Methods

Given the mandate of the MDGF and donor funding requirements, at a very general level all of the final 'chosen methods', had to comply with the overarching mission of environmentally sound development, poverty alleviation and a focus on climate change issues. For this reason, the dual level approach of both policy mainstreaming and field level adaptation projects was used through the activities of all of the JPs. Additionally, the period of the JPs was typically three years, which further limited the type and duration of activities chosen. Consequently, the scope and type of activities were to at least some degree constrained by the mandated purpose and time frame of the MDGF. Despite these limitations, however, the specific methods chosen by the individual JPs were still quite distinct.

The methods chosen to address all of the identified problems varied quite significantly between the different JPs. This was due to the fact that a) the JPs were dealing with very different national priorities, and in vastly different contexts, and b) the process taken to identify the causation of problems also differed quite significantly, thus having an impact on the eventual approach chosen.

In many of the JPs, the chosen methods at the field level were linked to livelihood diversification activities. In large part, this is due to a generally accepted causal theory that links environmental degradation, and vulnerability to climate change, to poverty and low levels of economic development that in turn affect the adaptive capacity of society. Consequently, it is also generally accepted that creating alternate livelihood and income generation opportunities, will decrease natural resource degradation and additionally improve peoples' resilience to climatic changes. In Mozambique, for example, the field level adaptation activities are very strongly linked to diversification:

> "[we have] activities designed to help people to adapt to climate change, and also help them to diversify their livelihoods – you can't really disassociate those two" [sic]

Another example is the Mauritania JP, which has taken a similar approach. When speaking about the involvement of local communities in the implementation of field projects, it was mentioned that:

> "all activities should have an economic aspect, not environmental because it's nice, otherwise they will just leave you… because they have to eat. Now we are [taking the] environment as natural capital." [sic]

These examples also show the strong linkage between the work of the MDGF and more general development efforts. Environmentally-inspired activities do not have strictly environmental

considerations, but rather the human component of environmental degradation and climate change are explicitly taken into account in the strategies and methods chosen by the JPs.

The above points relate strongly to the suggestions raised by Swanson et al. (2004) in their investigation of adaptive management approaches for sustainable development, which have relevance here. They argue that an essential aspect in successful sustainable development strategies, is the need to not only recognize, but also act upon the linkages between economic, social and environmental systems. These linkages (and their influences, both positive and negative) can be used as a point of departure in pursuing sustainable development realities. The same is true of climate change adaptation activities, which must take into account these interlinkages in order to develop holistic and sustainable approaches.

Another example of method variance is due to differences in perceptions towards climate change. In Turkey, at the start of the JP, they faced quite a hostile government environment on issues related to climate change. For this reason, they had to come up with alternative ways to approach and essentially 'sell' the JP priorities to the Turkish government:

> "most of the Turkish government institutions consider climate change to be a threat to development efforts. So it was hard to break that belief, because this is mainly due to mitigation… But when it comes to adaptation, we had the opportunity to communicate it in such a way that the level of buy-in of the government was much higher when compared to mitigation. We told them that climate change adaptation is like the new name of sustainable development."

Thus, sensitization of government officials ended up being a primary focus at the start of the Turkey JP, instead of starting with specific climate change adaptation activities.

In contrast, other JPs were faced with a very different initial environment, which influenced the selection of JP methods and activities. In Peru, for example, they faced not a hostile environment but rather one where changes in climate have been so dramatic and visible that communities themselves have approached the government for help. The regional focus of the Peru JP is in Cusco, in the Andean region, which has seen very dramatic changes in precipitation and temperature:

> "Traditional agriculture is always based on biological indicators that people can see… And farmers are now noticing that all these things are just simply upside down. So peasants are asking them [government] to help them to understand the weather, because they are not capable of doing it themselves."

As a result of these initial circumstances and identified priorities of the Cusco region, the approach taken was focused on implementing very practical strategies to deal with the changes rapidly taking place. For example, activities to adapt agricultural techniques through research and training, were identified as a priority from the start. In comparison to Turkey, such field activities occurred at a later stage, yet the interventions were much more rapid in the case of Peru due to the pre-existing conditions and perceptions of climate change.

Other countries also faced very different initial circumstances and priorities which affected chosen methods for their specific problems. In Bosnia and Herzegovina, for example, their relatively high

levels of economic development and limited reliance on natural resources (e.g. not much subsistence agriculture) compared to the other country JPs meant their approach was entirely different. Where the main priority in Bosnia and Herzegovina was targeting relatively poor environmental management, they worked more at the institutional level to advance more coordinated and participatory management techniques. This included the development of local environmental management regimes through participatory planning methodologies, also capitalizing on the existing high capacities of civil society.

Another contrasting country was China, where within one country, the differences between vulnerabilities to climate change, levels of economic development and capacities differ so significantly that both the selected problems and methods to target these problems had to be tailored to the specific regional characteristics. For this reason, the selected methods ranged from building sea walls in coastal provinces with high levels of industry and economic development, to training in new agricultural techniques in areas more reliant on subsistence agriculture.

In more extreme circumstances, some JPs had to alter their chosen methods due to incidences of significant political instability. Two prominent examples of this was a coup which occurred in Mauritania in 2008 and a revolution which occurred in Egypt in 2011 – both of which took place in the middle of the respective JP activities. Due to these extremes, various changes to the JP activities had to be made. First, to avoid involvement with government during the interim periods before new governments were established. Second, to adapt to the changes in government after they were established. These extreme political events meant that operational changes were necessary, in order to first serve the needs of the populations, and second to remain politically neutral to the extent possible – particularly given the high profile nature of UN involvement in a country.

As can be seen by all of the above examples, the experience of each of the JPs was unique in their own respect. The overall content of the programmes, although driven by the same overarching mandate, differed quite significantly from country to country. These differences were due to not only the specific national context and/or priorities of the country the JP was operating in, but also due to the specific methods chosen to both problematize and select solutions for identified problems. However, it can also be seen that selected goals or outputs are not necessarily static – these can change alongside programme delivery, in response to shifting on-the-ground realities.

4.2. Institutional Corridor

The definition of institutional corridor can be found in Najam's (1995) description, which asks us to focus "our attention on understanding the institutional environment, or corridor, through which policy must pass as it translates into action" (p. 45). In reviewing this variable, Najam also goes on to state that:

> "The critical contribution of this variable is an identification of the key institutional players, conflicts between and within such institutions, and the dynamic and evolving relationship between the goals of the policy in question and of the agencies charged to implement it." (p.45)

It is further recognized within Najam's framework that discussion of institutional context also takes into account the wider, influencing effects of social, historical and political factors within which the

institutions are operating. The discussion of influencing factors, key institutional players, conflicts and synergies between partners and goals formed a prominent part of the interviews.

Quantitatively, this variable appears the third most often with a total count of 52 from the interviews. The institutional corridor, therefore, appears to be an important variable. However, it also manifested itself in many different ways during the course of the interviews, ranging from various institutional levels to specific challenges.

Each of the JPs had a similar organizational structure (please see Figure 9 below for a general depiction). A National Steering Committee was the highest level, that makes strategic decisions. In each JP, there was a lead UN agency and ministry. The key players at the national level were the partnering UN agencies as well as government ministries, who also typically form the Project Management Committee (PMC). The PMC is the working level of the JPs, overseeing the delivery and day-to-day administration of the JP work.

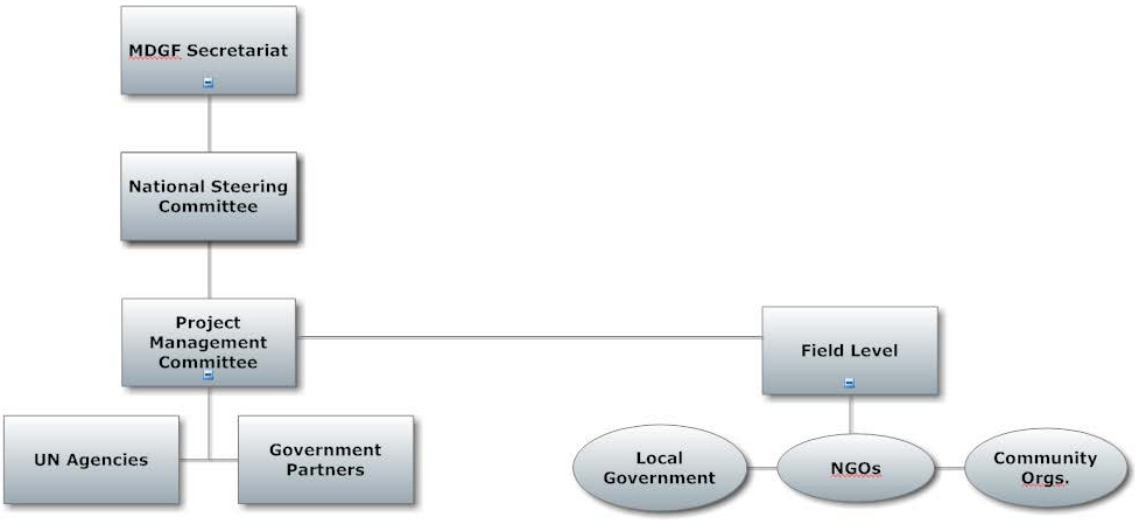


Fig. 9: JP Organizational Structure

Being a cross-cutting issue, climate change activities require the involvement of various organizational units which may or may not have a history of collaborating with one another. Typically, the UN agencies involved are UNEP, UNDP, FAO, World Health Organization (WHO) and others with related or overlapping mandates to climate change activities. Government partner ministries also ranged along these lines, and depend on specific government structures – such as Ministry of Environment, Ministry of Water, Ministry of Agriculture, Ministry of Health and so forth. It can be seen in the specific work of the JPs that their goals and activities have also been influenced to differing extents by the priorities and working histories of the individual agencies involved in JP execution.

Given the novel nature of the JPs' institutional set-up – forming part of the Delivering as One initiative of the UN – the discussion of institutional corridor can be divided into two levels. The first is the institutional corridor of the JPs themselves (i.e. how the different UN agencies partnered and worked with one another), and the second is concerned with how the JPs were able to implement

their activities within the institutional context (both national and sub-national) of the specific countries of work.

Despite the intention of the JPs being 'joint', across the board, the JP representatives revealed in the interviews that there were significant challenges in intra-JP collaboration. As each UN agency has historically worked in isolation, this organizational culture has fed into the JPs' work. In some cases, this has negatively affected programme outcomes. In the case of Ethiopia, for example, an opinion was that:

> "personally my assessment is that we have to do this several times before agencies can work together. The issue is sometimes mandates are overlapping, sometimes there is problems of synchronization… and this has an impact on the overall delivery of the program. There definitely needs to synchronize and harmonize a bit more, and if possible talk a little bit more to each other." [sic]

Similar sentiments came from the representative of the Mauritania JP:

> "all these UN agencies they do not have the experience of working together. In the country, each UN agency has his own money, working with his partner… So now you tell them, One UN spirit, one way of doing – and all of them jump on the cake… once they get the cake – the money – each UN agency wants now to work with his own partner." [sic]

This point relates not only to the culture of different agencies not used to working with each other, but also to the institutional constraints which hinder harmonized processes. For example, a number of JP representatives mentioned that much of their time is allocated to producing various reports – which deal with the same issues – because of the different operating procedures or requirements of the individual partner agencies. These administrative challenges are directly related, and a product of, the specific institutional boundaries of how the JPs function, both internally and externally.

At the level of implementing with national partner agencies and groups, similar challenges as found in intra-UN collaboration also emerged. For example, the Turkey JP representative likened the cultures of different UN agencies with that of government ministries:

> "it was very challenging putting all of them together in one team, because these have their own working cultures, their own administrative rules, plus no culture of working together… Meanwhile, like the UN organizations, also the ministries don't have a culture of working together."

This fragmented approach has the potential to negatively affect project and programme outcomes as mentioned above.

However, several JPs actively implemented measures to counteract this fragmentation. On a substantive level, the Egypt JP is a prime example. In this JP, their main components were looking separately at issues of agriculture, water and energy, each being headed by a respective UN agency and government ministry. In order to facilitate sharing and collaboration between the different components, the JP began organizing cross-component meetings. These have been key to avoid duplication of efforts, and also facilitate a culture of working together across sectoral boundaries.

Another example was provided by the Turkey JP, of trying to counteract the organizational culture of fragmentation. This JP actively tried to foster a common identity:

> "We tried for example at least to say they are not coming from UNIDO but from the MDGF JP… we tried all the time to call ourselves 'JP'. So we tried to give the impression that *UN* was working there. But it was challenging."

While efforts have been made to counteract these challenges, it is clear that the institutional framework and work cultures within which the JPs are functioning pose a significant challenge to the realization of harmonized activities and effective results.

Another significant challenge is the nature of the UN agencies themselves. For example, a number of the JPs had partner agencies that were non-resident in the country (i.e. UN agencies who work remotely from a regional office, and do not have a permanent presence in the country). This often caused a tension between the types of work that could be carried out through these agencies, when compared to the existing competencies and field relationships of other partner agencies who had a permanent presence in the country. An example was provided by Mauritania, where having a non-resident agency posed challenges for coordination:

> "the bad student of the program was a little bit UNESCO because they are not a resident agency… mostly they came during the time to do directly their work on the field and then go back, without consulting the others." [sic]

Another example came from Mozambique, who revealed that the specific institutional framework of UNEP, again a non-resident agency, created tension in delivering project activities:

> "it's a question of UNEP rules and regulations, we're not really geared to delivering in the field, so it isn't necessarily that people don't want to support, it's just the rules don't allow that level of flexibility that you need working in the field… I think there's a tension between the field and headquarters within the UN."

Coming down to the sub-national, at lower institutional levels, particularly working on field projects, the administrative make-up of the JPs could differ quite significantly according to the overarching goals and specific context of the country/locale in question. Key players include provincial, district and municipal governments, local community organizations, and also NGOs.

The ways in which JPs worked at this level also differed significantly. In some cases, for example in Bosnia and Herzegovina, the UN agencies did not get involved directly but rather worked solely through contracted NGOs, acting as an oversight body. In other circumstances UN agency partners were working directly with local level governments and communities. In Mozambique, for example, UN field offices were set up in the province they were working in, and projects were delivered directly in conjunction with district government authorities. In contrast, in Colombia the JP was working in a conflict zone where the local populations had a huge amount of distrust in the government, therefore they had to work entirely outside of government mechanisms in order for the JP aims and work to be accepted by the *campesina* (indigenous peasant farmer) communities.

It can be seen that the institutional corridor – key players, goals and mechanisms – at the field level therefore differed very significantly according to the specific context of the JP work. However, in all cases it included collaboration of groups who did not necessarily have a culture of working together, or built upon some existing relationships in order to strengthen their capacities towards tackling climate change.

Clearly, as a cross-cutting issue, climate change poses significant challenges to existing institutional frameworks which tend to work in very compartmentalized manners, with a silo mentality. This challenge is not only found between UN agencies, but also amongst ministries who fall under one single government administration. Local level institutional frameworks can also be challenging to work with, but identifying effective partners and working through/with them is key to successful field activities.

4.3. Commitment

Najam (1995) notes that much of the literature on commitment has been concerned with street-level bureaucrats – i.e. those who are ultimately tasked with delivering a policy or programme in practice. While this is clearly an important point in the delivery chain, it is not the only one. In this work, this variable is defined as the commitment of those entrusted with carrying out implementation, at various levels. From this it can be seen that commitment levels are important, not just at the top or 'street-level' of implementation, but at all levels.

Najam also suggests that: "the first task in analyzing the commitment variable… should be to catalogue *all* points in the process where a lack of commitment might influence implementation effectiveness" (Najam 1995 p.46). For this reason, the interview questions aimed to explore where in each of the JP's work there were notable instances of either high, or non-commitment, levels.

This variable appears the fourth most often, quantitatively, with a total count of 40 from the interviews. Yet the rich information contained in the interviews, reveals an interesting relationship between commitment levels and the different JPs' approaches and degrees of effectiveness. The interview results also show significant variations between different JP experiences with commitment as a variable.

In many cases during the interviews, the commitment variable was brought up hand-in-hand with the concept of ownership. All of the JPs were designed from the outset with the intention of partnering with national counterparts so as to transfer capacities in addressing climate change adaptation. An intentional part of this structure was the aim of building ownership of the issues at hand, and thus sustainability of the interventions even after JP closure. It was partly for this reason that the identification of program goals and actions (discussed in the content section above) often occurred in close consultation with government and other national counterparts during the JP inception and design phases. In some cases, national ownership was initiated to such a high degree that the lead ministry was a key coordinator of JP activities. Moreover, in such cases, the partnership with the UN representatives of the JP was seen as just that – a partnership, and not a hierarchical relationship. This was the case, for example, in the China JP. In contrast, the China representative noted during the interview:

> "I noticed [the] problem with other JPs where there was no one clear lead ministry… and then none of the other ministries perhaps wanted to play second fiddle to another." [sic]

> "When you consult government from the beginning, then you already have more ownership and support."

Without the commitment of key counterparts, JP work could be either slowed or blocked altogether. For example, in Mozambique, the role of the Ministry of Environment (who was meant to be the lead government partner) had a negative influence at the start of the JP:

> "in the beginning they had quite a counterproductive role in the JP, they felt like they hadn't been sufficiently consulted – probably correctly – in the development of the JP… they kind of saw this as a UN program, not as their program."

Even if not actively blocking program activities, low levels of commitment or interest can thus also lead to stagnation in developing partnerships and underline the need to create more harmonized and effective programmes. This is not only limited to national counterparts, but can even include UN agencies. For example, the Mauritania JP pointed out that:

> "It's quite often that, in Africa when you are not part of the process [from] the beginning, you really don't care. Because there is no return to you… There is some UN agencies – they were not involved from the beginning, because you cannot pull all UN agencies. So they really do not care [about] the program…. some ministries in the government think that this thematic is their thematic, but they are not part of the program so they will not support you at all." [sic]

Low levels of ownership can thus be seen as a high constraint to commitment. On the other hand, high levels of ownership are correlated with high commitment levels. It can be assumed that ownership is a significant influence in the sustainability of program efforts. These points are linked also to that raised by Swanson et al. (2004), of the importance of institutionalizing effective participation in planning processes, to both raise awareness of issues as well as building procedural trust. Participation and trust are strongly linked to the issues of ownership and commitment.

Another key point raised in the interviews is the important role of champions to facilitate commitment to the mandate of the JP and specific activities. In the case of Ethiopia, a key barrier to the work of the JP was in translating results of field level practices into the policy mainstreaming work at the national level. The Ethiopia JP representative associated this barrier to a missing link in key persons – and therefore commitment by these people to push their agenda forward:

> "you have to have champions – and champions mean having one or two key people in the policy process… Some of the issues we are dealing with are the allocation of national resources – the more you have a champion, that's why you get better access to the resource. I think that's one area where the JP didn't put in the list of priorities, but it should."

In contrast, cases where champions were identified and/or emerged, agendas could be pushed through more easily. A result of this was higher levels of commitment more generally. In the Jordan case, the example was provided of the second chair of the PMC, a government official:

> "At the beginning the PMC was chaired by the resident coordinator [of the UN], and then it was a wise choice by them for the PMC to be chaired instead by a government person. As a person, and as a position, which is a very high position, she was very influential in initiating the activities and supporting."

A similar point was raised for the Mozambique JP. In their field-level work, they were working primarily through district government. A change in position again was a key positive tipping point for the JP activities:

> "the district administrator has been a key person. He's been changed once during the course of the JP, and I think that has made a difference. The new administrator is a lot more positive and proactive, and more actively engaged in the implementation of the program."

Thus, it can be seen that at different levels of implementation, gaining the support of key persons in the process can have a significant effect on programme activities and effectiveness. Champions, therefore, can be a key factor in raising and maintaining commitment levels throughout the programme.

These points resonate strongly with the identification of leadership as a key criteria related to sustainable development strategies (Swanson et al. 2004). By providing coherence, clear commitment and focus, arguably leadership is "perhaps the most critical aspect of strategic management" (Swanson et al. 2004, p.7). Clear leadership, through dedicated commitment as well as showcased through select champions, can thus be a key factor in building support and longevity of interventions.

Another important point raised about commitment is the interaction between bottom-up and top-down effects. It is clear from the above examples that the product of dedicated and committed persons at different levels can help to cascade the work and sustain programme activities. However, there are also clear instances where blockages can occur that may halt or temporarily prevent work from going through, even though there may be several points of high commitment at different levels.

An interesting example of this is Peru, where theoretically there are high degrees of commitment from all levels towards climate change adaptation. At the national level, there is a legal framework which commits the government to addressing climate change impacts in the country. At the regional level in Cusco, due to extreme climatic occurrences which occurred in 2010, the regional government has officially committed to targeting climate change and adaptation measures. Moreover, at the local community level, climatic extremes have been so visible that communities are actively asking for interventions to be made by their government authorities. However, a key barrier to this work was identified by a Peru JP representatives as financial:

> "Although people are just saying sure we'll support, it's not enough unless they invest – a major problem is lack of budget."

> "There is formal support – a legal framework – but [there is] no real financial will."

It can therefore be seen that financial commitment – which would be demonstrated by targeted budget funding from national to regional levels – is a key constraint to the JP activities, even if there is a demonstrably high level of (verbal) commitment from the different parties involved. A similar point was raised by Swanson et al. (2004), who argue that strategic sustainable development objectives will remain unrealized if not integrated into national budgetary processes. Such examples show how the interaction between different levels and their degrees of commitment can invariably impact implementation effectiveness.

A last important point related to commitment is the profile and work of the UN itself, which lends it a degree of 'convening power'. This alludes to the fact that in certain circumstances, the UN can bring together partners and address issues that other players in a given context are not able to. For example, in Colombia, as previously mentioned, the fact that the UN was seen as a neutral agency not linked to either the government or rebel factions was key to garnering the support of target communities. Similarly, from the Mauritania JP, in discussing key influential factors of the programme, it was noted:

> "Something influential first is the UN. When you say UN programme, and the Resident Coordinator [can] talk to the Ministry of Economy and Finance… people take it more serious… it's a matter of notoriety." [sic]

In itself, therefore, UN presence can be key to garnering support and commitment of key persons and institutions within a country. On the other hand, however, a careful line may need to be treaded. In circumstances of political instability – such as the coup in Mauritania or the revolution in Egypt. In these cases, the high profile nature of the UN meant that very careful and sensitive measures had to be taken to ensure the UN agencies' work did not overstep the boundaries of international political consensus, yet still serve the communities who are the targeted beneficiaries of the programmes. Commitment, therefore, is not necessarily a static or neutral component of programme implementation, and can be both helped and hindered by the high profile work and mandated political neutrality of the UN.

4.4. Capacity

Capacity and capacity building are concepts which have become widely used in development and policy implementation literature, yet they are often conceptualized very broadly, and it is not fully agreed what exactly these terms mean. To provide conceptual and analytical focus, Najam's (1995) paper adopts a narrow definition of capacity, focused on administrative resources. Such administrative resources include: size, skills and knowledge of staff; authoritative powers; and physical resources such as buildings and supplies (Najam 1995). In this thesis work, however, a broader definition of capacity is adopted, which is: the capacity of implementers' to carry out the changes desired by the policy, program or activities – this includes both human and financial resources.

While adopting a wider definition, the tasks associated with assessing this variable are in line with Najam's suggested approach:

> "the first task… is to catalog the level of administrative capacity mandated by the said policy… the second, more important and much more difficult, task is to identify what types and levels of capacity are required at what points of the administrative hierarchy, in which relevant agencies, for effective implementation." (Najam 1995 p.50)

The code count of this variable shows that capacity appeared 30 times in the interviews. This is the second-last total count quantitatively. However, there was still a rich amount of information revealed in the interviews about capacity-related issues.

The topics of capacity and capacity building were raised during the interviews for two main reasons. The primary reason is that capacity building measures were often an in-built goal of the JP activities, and the secondary reason is related to capacity challenges which arose during implementation.

In the initial periods of the JPs, during the project design and screening/baseline studies stages, there was a focus on identifying where capacity gaps and/or needs were, in relation to climate change and adaptation. This aim was to help fill these gaps with targeted measures through the JP activity implementation. For example, when conducting vulnerability assessments or other more technical studies, where local capacities were not adequate or present, often these assessments would be carried out by dual local/external specialists, whereby local capacities could be utilized as well as strengthened during this process. In Ethiopia, for example:

> "we didn't try and use too much outside, but tried to use what was available locally and then just complemented… All we did was, where there was a gap, we filled the gap… And in that sense its reassuring because it will not be easy for the program to just disappear."

In the majority of cases, external capacities had to be used for more technical assessments or studies. Particularly due the nature of the JPs – focusing on climate change – there was often a need for specialized experts, for example to conduct GCM or other carbon/climate-related technical assessments. Such capacities were difficult to obtain locally, first of all because this is a relatively new field, and secondly because such specialized expertise simply doesn't exist in many of the JP target countries which are mostly low to middle income nations.

In a number of cases, such as in the Colombia and Jordan JPs, however, purely technical studies were adapted to the local context they were working in. In this way they were able to utilize both local and external capacities in a complementary fashion. In Colombia, vulnerability analyses were carried out, by selected local representatives, based on a method designed by joint local-external groups. In Jordan, the primary focus of their work was on water management. In one community, they are piloting new processes towards wastewater treatment and use, whereby the community has been involved:

> "during the design, during the implementation, and now in the evaluation. And even after the project leaves, they will still be able to formulate all of the strategies."

In this way, it can be seen that not only are local capacities intentionally being utilized by the JPs, but also being strengthened through the activities and partnerships created.

However, this was not the case in all JPs. Although capacity building has been an intentional part of the goals and/or design, this was not always realized. When discussing the foreseen challenges with the ending of the JP in Mozambique, for example, one of the representatives stated that:

> "we've been kind of ad-hoc developing exit strategies… maybe [what] we're not doing enough of at the moment – is the need for training as well. Not just thinking that we can hand things over and it will go well, but really providing training needed so people have the capacities."

Such a comment raises the question of how different programme interventions are designed from the outset, and what their final goals are. Building in capacity as part of intentional programme design clearly has its benefits, but also numerous challenges with realization. It should be noted that 'doing' capacity building in itself also requires certain capacity levels. Simply implementing certain activities does not mean that capacities will be automatically transferred, rather this needs to be a deliberate exercise, and carried out by qualified personnel.

The second reason capacity emerged as an issue during the interviews was in relation to challenges or delays associated with JP implementation itself.

In some cases, the capacity levels found by the JPs were quite different from initial expectations, which meant that some of the programme activities or processes had to be altered. This occurred due to both higher or lower than expected capacities. In Turkey, for example:

> "the Ministry of Environment was our beneficiary, they had a capacity beyond our expectations but still required targeted capacity development activities… the government has high quality technical experts [but] when it comes to assigned decision makers, it was tough… So in different components of the government, there were different capacities.

In such cases, alterations had to be made to adapt the JP activities to on-the-ground realities of different capacities. Generally, however, the different types of existing capacities have had an impact on the type of work that has been delivered through the JPs. In Bosnia and Herzegovina, for example, although generally the output of the work of local governments has been quite positive:

> "We did have some that were going through the process faster, some slower, but this refers [to] the level of capacities of the local communities, especially the local government… You have small communities where few people are more or less doing everything"

A similar point was raised by a representative from the Mozambique JP. In Mozambique, the majority of their activities were focused on community based adaptation projects, working largely through district authorities. However:

> "at the district level… most of the ministries have representatives but they don't have a unit. So often one person wears several hats – usually he is responsible for, for example, environment, public works and transport. At the district level, government resources are thinly spread so it's quite difficult to work."

In such circumstances, it is clear that administrative capacities as defined by Najam can have a significant impact on project or programme delivery. However, it is necessary to also keep in mind here that the government structure at different levels of administration – which could be affected by several variables, such as financial resources or even political priorities – can also have an effect on existing capacities. Such conditions are difficult to alter, and cannot be changed solely through activities such as 'capacity building' when the root cause of a 'lack of capacity' may not simply be a lack of administrative resources. Hence, it can be seen that capacities – lack thereof, and associated challenges with capacity building – may not be a simple or easy diagnostic task.

It should be noted that these challenges or opportunities related to capacities are not restricted solely to government structures or personnel. The capacities of different partner agencies, such as NGOs and local communities, was also raised a few times in the interviews. In Bosnia and Herzegovina, for example, a country with a very strong civil society with high capacities, the majority of community level work was delivered solely through NGOs and local governments, which was considered quite successful. On the other hand, an example was provided from the Mauritania JP of the challenges associated with having to use NGO partners in a context where civil society is weak:

> "you have also… NGOs that are just interested to get money from the project, and survive, so their outcome will not be very effective. But they are from the area and you can't avoid them."

> "we call them 'ONG cartables' – it's the NGO with an empty bag… as the country is poor, the civil society is not very strong, so maybe it's the only NGO you find there and you will be supposed to work with them. There is no way you can work with someone else, but you know from the beginning that there is also a lack of capacity in the NGO." [sic]

Clearly, the existing capacities of civil society can have a large influence on how programme activities are designed and delivered, and also the final outcome of these activities. It is also clear, however, that overarching requirements such as NGO inclusion, while they may appear simple and logical on paper, in reality may have counterproductive effects on the type and quality of work that can be delivered through these partners.

However, the story of low capacities does not necessarily have to end badly. Although working with certain partners with lack of capacities in specialized areas have meant numerous challenges for the JPs' work, for the most part an increase in capacity by the end of programme activities is a positive (and in most cases deliberate) outcome of this type of work. In the Jordan JP for example, there has been an evolution in national capacities throughout the course of the programme's implementation:

> "[a problem] we have faced is the lack of capacities to perform certain things… By the end of the program, by now I think we have created enough capacity in the country and the ministries… I would say this program is one block in the whole progress, I mean think now whoever comes after us will find better conditions to deal with climate change adaptation."

Hence, it can be seen that capacities are also in no way static. In the same way that JP activities needed alteration to adapt to the existing realities of national and sub-national partners' capacities (whether these were higher or lower than expected), changes in capacities – and their influencing

factors – will undoubtedly evolve over time. The purpose of the JPs' work, which can be understood as helping to build national capacities to adapt to climate change, can therefore be seen through the lens of evolving capacity levels.

4.5. Clients and Coalitions

This is the only variable in Najam's framework which is focused almost entirely outside the state, inspired by the fact that "the ultimate effectiveness of any implementation process depends equally on nonstate actors" (Najam 1995 p.51). This variable has two components: clients – who are the targeted beneficiaries of any policy/programme; and coalitions – interest groups who, although they may not be targeted directly by the programme, have motivations to affect the programme work and/or outcomes.

In this thesis work, clients and coalitions are defined as: the groups or individuals whose interests are enhanced/threatened by the policy and/or program, and the actions they take in response to its implementation either to support or block.

In applying this variable, Najam posits that the primary task is "determining the *potential influential* clients and coalitions from the larger cast of characters in the implementation theatre" (Najam 1995 p.52). Moreover, he argues that it is just as important to identify actors who are not officially recognized, as very often it is them who, "by virtue of not being recognized or catered for, have the greatest incentive to disrupt implementation" (Najam 1995 p. 52). It is this guidance which inspired the interview question related to clients and coalitions, with discussion in the interviews about the relationship of the JP with targeted clients/beneficiaries, as well as the challenges and opportunities associated with various coalitions which emerged.

This variable appeared the most often in the interviews, with a total count of 65. This indicates high significance of this variable, which is explained and discussed in more detail in Chapter 6 below.

Stemming from the general mandates of the JPs – both national mainstreaming and field level climate change adaptation – the clients and coalitions can roughly be divided into these two levels. For clients, at the national level this was primarily national ministries such as Environment, Agriculture, Water and Health. At the local level, these were primarily local communities but also sub-national government agencies. For coalitions these groups can be similarly divided, as at the national level this included other government ministries or bodies who were not directly targeted by the JP, and also other national-level bodies such as industry associations. At the local level, coalitions could similarly also include surrounding communities, civil society organizations, private organizations, and sub-national governmental bodies.

From the results of the interviews, there were examples provided of both positive and negative experiences with clients and coalitions. Positive meaning that they were helpful (and in some cases essential) contributors to the work of the JP work, and negative meaning that there were either instances of non-interest, or active blocking of some JP processes.

It deserves mention that the distinction between clients and coalitions in the JPs are in many cases blurred and overlapping. Often, the 'clients' of specific parts of the JP intervention were also seen as partners, rather than beneficiaries receiving assistance in a top-down fashion. In such cases, the

identified clients can be seen as 'coalitions' in their own right. For example, in the case of Jordan, the JP faced differing degrees of support from the partner agencies. The negative perspectives of some of these partners (or clients) at the start of the JP process, led to many challenges in trying to garner the support of these key groups and thus related bodies in their spheres of influence (coalitions). As described by the representative of the Jordan JP:

> "If I say that we have been supported by all partners from all sides from the beginning, I wouldn't be telling the truth. We have different partners who are looking at the JP from different perspectives, so some of them see it as an opportunity to gain out of the JP, and some of them have seen it as an initiative that will make them lose some of their benefits and privileges."

In a more positive light, the case of Bosnia and Herzegovina shows that some of the clients or partners for their component on local government environmental management, were able to collaborate together to form a peer coalition:

> "we did some kind of peer review/peer monitoring assistance… some municipalities were very successful in this process, [and] were able to transfer this to the municipality that had some doubts or reservations." [sic]

When looking at clients specifically, often the 'beneficiaries' of particular JP activities can be seen as the local communities with whom climate change adaptation projects were carried out. Particularly when looking at the context-specific needs of climate change adaptation, this is clearly an important level to consider. It is local community individuals and associations who can be seen entirely as non-state actors in the process, and the successful implementation of projects would clearly not go through without them. When discussing the performance of the field implementation work, a representative of the Mozambique JP made clear that:

> "without the collaboration and cooperation of the communities with which we are working, we would never have achieved half as much as we have."

However, the interplay of local communities with the JPs were not always a positive experience. There were some examples of active blocking of activities during JP implementation, which can be understood as part of coalitions. This was seen by the Mauritania JP in their pilot programmes, which they conducted at the local community level:

> "At the local level, there is some group of communities… I want this to be in my community, in my area, because I want to be powerful… So those people [sometimes] block some process… they will use their influence to change any transparent decision." [sic]

This relates to the idea put forth by Najam (1995) that those who feel left out from a process, and feel that they could gain from being part of it, may have the motivation to actively disrupt activities in their own favour. This may not necessarily be motivated by aims of the social good, but rather to gain at the expense of others' loss, as indicated by the quote above.

On the other hand, sometimes coalitions may arise not because they disapprove of an activity or would like to gain it for selfish reasons, but because they prefer that it becomes more widespread.

This was the experience in the Colombia JP, where one of the main project activities was to develop agricultural 'field schools for adaptation' to help spread new practices to deal with changing climatic conditions. The JP intended to implement only a small number of these schools initially, while the community associations wanted it to be expanded:

> "there was a lot of tension between them [JP] and the indigenous authorities. So the JP wanted to concentrate information in these replicas, and the local authorities wanted to spread the information much faster. The two groups decided to give in."

In this case of Colombia, they came up with a compromise position from both sides. Such an example alludes to the fact that willing clients can become coalitions which attempt to either disrupt or alter programme activities, indicating that such roles are also transient and can change dramatically during project or programme life cycles.

At the national level, there were examples provided of coalitions who – although seemingly not actively blocking processes, could still have a counterproductive effect on programme activities. This could even occur within the UN system itself. For example, the Mauritania JP representative pointed out that they experienced some difficulties from those who felt 'blunted' or left out by the process:

> "There is some UN agencies – they were not involved from the beginning, because you cannot pull all UN agencies. So they really do not care [about] the program…. some ministries in the government think that this thematic is their thematic, but they are not part of the program so they will not support you at all." [sic]

Particularly for an issue as cross-cutting as climate change adaptation, it is clear that numerous and wide-ranging interests will be affected and/or have a stake in related activities. Moreover, there will always be those who expect to get a piece of the 'pie' even if the available resources are limited. However, due to practical and financial limitations not all can be brought into the process officially, which may determine the nature of coalitions that may emerge.

On the other hand, there were some instances where the JPs faced an outright denial or opposition towards climate change activities. The example was provided in the Turkey JP where:

> "The biggest bottleneck was on water management… especially because of hydropower plants… [the government] consider hydropower a renewable energy."

> "When we had our stakeholders analysis, there was also a perception analysis [and] some of the personnel of state hydraulic works in the region were climate change deniers… It was very challenging at the beginning, because there was this huge resistance, and really obvious resistance."

Facing such strong negative coalitions was clearly a challenge to the Turkey JP. However the fact that they conducted this perception analysis was clearly beneficial as they were aware of at least some of the challenges they could face in implementation of programme activities. Such an example highlights the need to anticipate potential negative coalitions.

When it comes to the local level, there are some general trends in identifying willing or positive coalitions. Najam (1995) highlights that in the context of developing nations, nonstate local leaders are often key players in facilitating coalitions. This point came across also in the JPs. One example was provided by the Mauritania JP, when discussing partnerships with local leaders (either local government or traditional leaders) in kick-starting community-based activities:

> "we use them as speakers, or as moderators, or organizers. When they ask for a meeting, people will come. And when they speak, also the people listen to them."

A similar point was raised by a representative of the Mozambique JP:

> "working through district government it's very easy to get to the local leaders, it can be the party secretariat or the traditional leaders… they work together now… being seen as a government partner, its relatively easy to get down to the very smallest unit of the village."

As such, it can be seen that a key factor in project or programme acceptance in the first place is related to identifying the key persons or group who can facilitate wider support for the program. The importance of not getting this process right was highlighted in an anecdote provided by the Colombia JP, which occurred when they were planning to start their community-based activities:

> "the opening of the program was a huge event, there were all these people and big things, but from the community only came *one* person… This failed opening had been when the government was still visibly involved, and at the time the tensions were very high [between] the government and communities."

The JP had not been aware of this high tension between the government and the targeted community beneficiaries, hence in this case being seen as a government partner was clearly counterproductive. Only when the JP went back to the communities, as solely representatives of the UN and disassociated from the government, could they garner the trust and support of the local communities.

These examples highlight the importance of identifying the right persons to work with in a community, in order to facilitate the necessary support and coalitions to push through programme activities.

Another point related to the coalitions in the JP experiences is to do with complementary coalitions. When addressing a topic such as climate change, it will undoubtedly affect almost all sectors of economy and society. This poses a challenge in scanning the horizon and ensuring that programme activities are able to not only pacify potential disruptive coalitions, but also in ensuring that allies can be capitalized upon. Moreover, the fact that the topic of climate change adaptation is relatively new, can pose further challenges in starting to sensitize wider audiences to the importance of the topic and the kinds of interventions that may be necessary.

As seen from a number of examples in the JP interviews, and their experiences generally, that beginning to broach the topic of climate change adaptation was quite difficult at first, but by the end of the programme activities they felt there was a much higher uptake and understanding of the topic. However, this increased sensitivity and understanding cannot be pinned to the work of the JPs

alone, which is a point also recognized. For example, one of the Mozambique JP representatives, when discussing what has been critical to the success of their activities, highlighted:

> "I think that one factor is the fact that we're not working in isolation, and that a number of other agencies and organizations…. All have bolt-on climate change components on their food security programs. So I think the fact that we have contributed to a process has also been successful."

Other JPs gave examples of collaboration with existing research or academic organizations, such as in the Turkey and Peru JPs. Such coalitions were instrumental in gathering adequate information (particularly of climate change science), and also ensuring continued research and investigation into the topic.

Being able to identify and collaborate with others to advance the work of climate change adaptation was key to success – and this signifies the importance of developing partnerships, and strengthening coalitions.

A last point is related to sustainability, or potential for continuity, of programme efforts. Either if existing positive coalitions are capitalized upon, or new coalitions are forged during the course of a programme, this can be key to ensuring that the overarching goals are realized in the long-term. A major deficiency in such interventions is that interest in a programme only lasts as long as the budgeted funding. While undoubtedly certain activities do require funding mechanisms to sustain them, when interest in and commitment towards a certain topic area can be created, this in itself can create the necessary motivation and momentum to keep activities running.

By gaining the interest and dedication of clients and coalitions – and this relates to all levels, from national authorities to local community members – and transforming their interest or even non-interest in a topic area into a positive coalition, then this can sustain efforts and ensure long-term results. A number of the JP representatives mentioned in the interviews that creating a change in consciousness, and new momentum, in their target countries has been one of the most positive outcomes. However, this should not be taken for granted and specific measures should be taken to spread the message, and garner support. The representative from the Turkey JP discussed how their communications component was a key part in the overall process, and also their most visible legacy from the JP's work:

> "the biggest lesson learnt is, you have to have a very strong communications component… with 7 million dollars [the JP budget], you cannot increase the capacity of a country of 75 million people on climate change adaptation, you just plant the seeds… and to show the seeds that you planted, your communication efforts are very important… That is where you deliver the message, and that is where you in fact ensure the replicability and sustainability of your efforts."

This point on communication has also been raised by a number of authors. For example, Pintér (2002) highlighted communication as an additional factor which can determine the influence of global environmental assessments. Without the integration of effective communication

components, key work and successes, and the support that this can garner from various parties, would remain within a very limited audience, and thus have minimal influence on wider processes.

From all of the above, it is clear that the variable of clients and coalitions has been quite prominent in the discussion of JPs' experiences. Additionally, the fact that this variable also appears most often in the interviews further signifies that this is an extremely important factor.

4.6. Environmental Conditions

This variable was added to the 5C+ Protocol, in order to bring an added dimension to investigating the relationship between all the original five factors found in Najam's framework, in the context of climate change adaptation.

In this thesis work, the environmental conditions variable is defined as: the environmental characteristics (elements, state, dynamics, challenges and opportunities) of a given geographical location.

For coding this variable, the incidence of references to environmental conditions was determined according to how the discussion related to the environmental conditions being taken into account by the JP, both for the identification of issues/activities, as well as how these conditions impacted upon processes throughout the course of the JP. In all cases, these were specifically related to necessities of, and measures towards, climate change adaptation. Based on the interview results, an initial set of components for this criterion include:

- current and predicted climate/weather related aspects
- breadth and urgency of identified issues
- severity/impact on human well-being (linked to vulnerability)
- time scale of impacts and adaptation responses

Quantitatively, this variable appears the least often in the interviews, with a total count of 26. This can be partially attributed to the fact that during the interviews, the questions related to the other five variables tended to lend a focus more towards institutional characteristics. However, there were notable instances where environmental conditions were discussed both in isolation and alongside some of the other variables.

The different JPs dealt with a very large variety and variability of environmental conditions, not only between but even within the countries of intervention. These different environmental conditions in many cases determined the focus of JP interventions and the types of activities undertaken. For example, in a country as large and as diverse as China, there are not only a wide variety and range of environmental conditions, but also consequently there will be a wide variety of impacts to the different ecosystems as a result of climate change. This also links to different ecosystem scales and interrelationships that need to be taken into consideration. The China JP took this diversity into account, in how they approached their JP activities:

> "[we] looked at the different parts of the hydrologic cycle. First we looked at glacial melting, then at surface water, and then groundwater and seal level rising. So it was also interesting

> the fact that China has very diverse geography… that we can look at all those things in one country."

A similar case can be seen in Turkey, which is also a relatively large country featuring various ecosystem types and thus diverse climate change impacts. As discussed by the Turkey JP representative:

> "in Turkey, well you have all the impacts… You can have for example heavy rains, extreme weather events on the Black Sea coast. Meanwhile you can have drought in central Anatolia. You can have impacts of sea level rise…. You can have coastal erosion in deltas… Turkey is like a laboratory."

However, in the case of the Turkey JP it was chosen to focus only on one specific area of the country, delineated by a river basin. The topical focus was based on an integrated water management approach, in dealing with the climate change impacts on this river basin. The different approaches taken by the Turkey and China JPs in response to these different environmental conditions, can be seen partly as a matter of budgeted funding and partly as a matter of priority. The China JP was the largest in terms of funding out of all programmes under the environment and climate change window, thus they were able to channel funds into a higher variety of programs. Moreover, they also partnered strongly with both government agencies and private industries to deliver different segments of the China programme. On the other hand, Turkey faced a very different institutional and political context from China, and thus chosen to focus efforts in one region, the results of which it hopes can be replicated and scaled up.

With other JPs, there was a decision from the onset to focus on specific areas of the country, and as a consequence they were dealing with relatively similar environmental conditions. This choice to target specific areas was due not only to coherence in environmental conditions, but also due to other criteria such as vulnerability to climate change. In Ethiopia for example, the JP's field activities focused solely on working with pastoralists in the northern part of the country:

> "this is part of the drylands, highly variable in terms of rainfall, so even taking the issue of climate change aside, it's a highly variable climate. Therefore there is always need to adjust to variability. Putting climate change in the equation, it will be even more variable and they will need to adapt, otherwise it's a dying activity."

Similarly, the Mozambique JP chose to focus on an area of the country – the Chicualacuala district – which is highly vulnerable to climate change, but also very remote and had thus far generally been marginalized by government and development efforts. From these examples, therefore, it can be seen that the selection of sites for intervention were based on a combination of environmental and non-environmental criteria.

In relation to the JP interventions, during the interviews, the descriptions of environmental conditions were in almost all cases related to the human face of these conditions. For example, in describing the characteristics of the Chicualacuala region of Mozambique:

> "from the climate change perspective, the main issue is increased variability in terms of rain – unpredictable rains, variable rains – that's the main issue, and its already a dry area so

> that's causing a lot of problems… because farming is becoming more difficult – lack of water, and the communities are turning to the forests and using them unsustainably in particular for charcoal."

This relation is not surprising, as our concerns with climate change and adaptation are primarily motivated by the impacts this will have on human populations and livelihoods. Moreover, the broad goals of the MDGF JPs target issues of poverty and vulnerability, which are concerned primarily with impacts on human populations. This focus was seen in the discussion of the content variable above.

Another notable point in the interviews' discussion of environmental conditions, is in relation to the severity and imminent realities of climate change in numerous locations worldwide. The expected and current changes in environmental conditions, as a consequence of climate change, are already quite alarming in some of the JP cases. For example, the Peru JP chose to focus on the Cusco region, in the Andean highlands. In this case, the projected environmental conditions are as follows:

> "The glaciers are melting. In 30 years, Peru has lost 22% of glaciers – in Cusco, its 30%. Now its one degree warmer in Cusco [than] in the last 30 years, on average. Rain is falling in a smaller number of months, and the rainfall is more intense… In the next 20 years, temperature is going to rise one and a half degrees in Peru. And in the highlands of the Andes, the temperature will go up by four degrees."

Yet these conditions are not limited to some future possibility. In the case of Cusco – and in other regions such as in the Mozambique example above – changes to environmental and human conditions are already occurring. From Peru again, during the interview the JP representative was very adamant about describing the severity of climate change impacts:

> "There will be very serious consequences with climate change, which will affect water and agriculture. The physical conditions in different ecosystems are changing, and peasants are not adapting as fast as the ecosystem changes."

Moreover, the environmental conditions in different countries are not only expected to occur gradually – such as with alterations in temperature and precipitation patterns – but also the incidence of extreme events is also expected to increase. The Egypt JP, for example, stated that:

> "the forecast is there will be more variability in temperature so you'll have more temperature swings. And we've seen that last year… we had hail in the desert, between Cairo and Alexandria, which is a newly developed agricultural area, and the hail was so strong it destroyed the crops."

Therefore, to adapt to the changing climate there is clearly a need not only to adapt to changes in climate, but also to changes in weather patterns. Human adaptations to climate change will thus have to focus on strengthening the resilience of societies to deal with both long-term changes and extreme events.

A final point related to environmental conditions, in the context of the JPs, and generally in climate change adaptation work, is the need to design interventions to be appropriate to specific contexts. As the diverse conditions the different JPs were dealing with indicate, there are many different

problems and alternative remediative methods that can be undertaken. However, even within one country the 'appropriate' approach can differ quite significantly, thus highlighting the need for not only national, but also sub-national approaches. The Turkey JP representative highlighted this need to be context specific:

> "when you talk about climate change adaptation, the national strategies or national efforts are too generic. Because even between two villages, 5km from each other, your adaptation efforts may change when it comes to climate change."

The differences between two villages only 5km from each other need not only be due to environmental conditions, but also due to various socio-economic and institutional characteristics. Thus, while specific climate change adaptation measures invariably need to be sensitive to environmental conditions, it is the additional non-environmental factors which may ultimately determine the design and efficacy of different remediative measures.

"this is a cross-sectoral issue, a multi-sectoral issue,
and nobody – no single authority, agency or partner – can do it alone"
Interviewee, 2012

Chapter 5: Discussion

As shown by the interview results in the previous chapter, the design, management and execution of the MDGF JPs has been a complex, at times challenging, task. Yet the theoretical framework used, has allowed the systematic identification of influential variables through the lens of the modified 5C Protocol. However, in order to better understand the forces at work that contribute to the development and implementation of JP adaptation initiatives, the relationships between the different variables also need to be taken into account, given that they are all: "linked to, and influenced by, the others – though to varying extents depending on the specific implementation situation" (Najam 1995 p. 36). While these relationships have been alluded to, in a few cases, in the previous chapter, they are discussed in more detail below.

This chapter also includes a section which explores the meaning of 'significance', and determines which are the most significant variables, and relationships between the variables, based on the experience of the JPs (RQ2). The use of the 5C Protocol with respect to climate change adaptation specifically (RQ3), is also discussed in this chapter.

Note that the discussion presented in this chapter derives directly from the interview results, supplemented by other information sources from the MDGF and discussions with vulnerability and adaptation experts.

5.1. Relationships

The relationships between the different variables were determined both intuitively and qualitatively, through the review of the interviews, and also quantitatively through using the ATLAS.ti qualitative data analysis software to code interview transcripts. Those relationships which emerged as significant are reviewed in this section.

From a purely quantitative standpoint, the relationships between variables were determined using the ATLAS.ti software. Using this software, it was possible to run co-occurrence[7] queries, which indicated how often each of the potential relationships occurred in the interviews. These results are displayed in Table 5 below.

[7] A co-occurrence between two variables is when these codes appear either immediately next to each other, or overlap with one another, in the interview transcripts.

Table 5: Codes Co-occurrences

	Content	Institutional Corridor	Commitment	Capacity	Clients and Coalitions	Environmental Conditions
Content		9	5	4	8	5
Institutional Corridor	9		3	4	11	0
Commitment	5	3		3	19	1
Capacity	4	4	3		10	0
Clients and Coalitions	8	11	19	10		2
Environmental Conditions	5	0	1	0	2	

Based on a total of six variables, there were 15 possible relationships that could have occurred. The wide range of co-occurences (from a count of 19 to 0) show that there was significant variation between how closely different factors may be related to one another.

The relationships between the different variables, based on the total number of co-occurrence counts, is depicted graphically in Figure 10 below. In this image, the 'strength' of these relationships have been determined in a comparative manner – i.e. the line thickness is relative to the highest number of counts (19) compared to the lowest number of counts (which is 0).

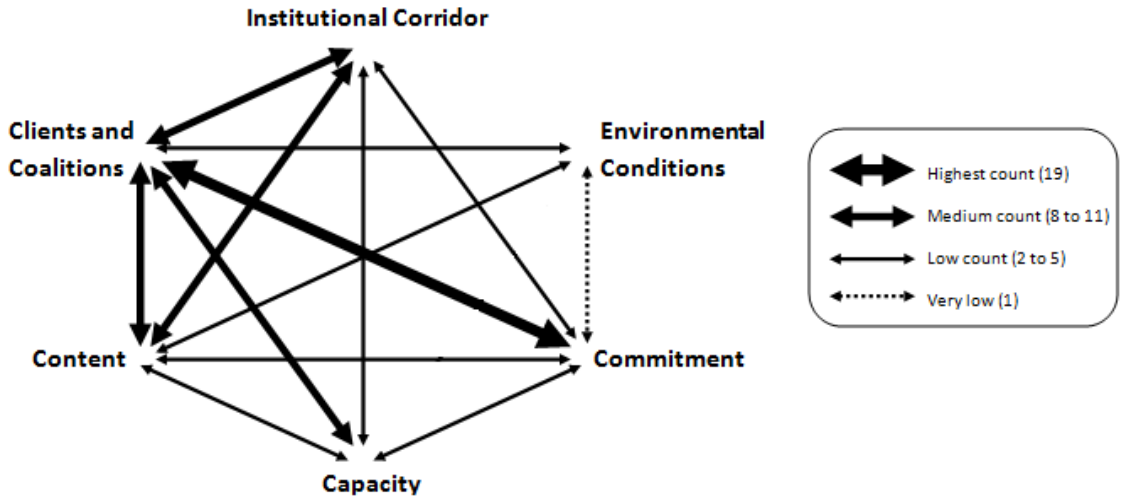


Fig. 10: Strength of Factor Relationships Based on Total Count of Co-occurrences[8]

Given that the clients and coalitions variable occurred the most frequently in the interviews, this is also the variable which showed a high degree of co-occurrence with other variables. By far, the

[8] The thickness of the lines indicates the relative strength of the relationship between two factors. The thickest line indicates a strength of 19 (the highest count), the medium-thickness line shows strength of 8 to 11, the thinnest lines indicate strength of 2 to 5, and the dotted line indicates weak strength of only 1. No line shows that there was no relationship (0 count) between the factors.

strongest relationship encountered was between the clients and coalitions and commitment variables (total co-occurrence count of 19).

In the previous chapter, the variable of ***commitment*** was related strongly to the importance of ownership and champions, which resonates strongly with the ***clients and coalitions*** variable as well. The ability to include clients – i.e. targeted beneficiaries – of a programme from the onset is necessary, not only to correctly identify needs and thus responses, but mostly to garner their support for programme aims and intentions. Getting the beneficiaries 'on board' is also a key avenue through which positive coalitions can be built. Thus it can be seen that both ownership and sustainability of programme interventions are interconnected with the commitment and the clients and coalitions variables. This was a point also strongly raised in various arenas outside of the JP interviews, including the lessons learnt submitted to the MDGF and discussions at the mid-term workshop in February.

The relationship between commitment and clients and coalitions is also an important consideration when downscaling an intervention from a broader, global mandate, to a more specified national or sub-national program. If people from lower scales – both clients and potential coalitions – are not involved from an early stage and in a meaningful way, then they are only given the possibility to react to a strategy, and not have significant influence on design and execution of activities (Deri pers.comm.). Similar points were also raised by Swanson et al. (2004) and Mitchell et al. (2006), who argued for the early inclusion of programme participants. In fact, stakeholders should be involved in a process of "coproduction of knowledge" (Mitchell et al. 2006, p. 19), and not just be passive recipients, in order to ensure relevance of and commitment to programme goals. Without this, it is not surprising if commitment or ownership is weak or non-existent; as ownership must derive from a process of involvement, it cannot be simply superimposed at a later stage externally.

Champions, on the other hand, are not only important to showcase commitment, but also to gain the support of further groups of people, i.e. forging partnerships and developing supportive coalitions who may have been external to the initial process. An inability to develop a sense of commitment to a programme's cause, and thereby identify champions for the cause, can have the counterproductive effect of negative coalitions emerging, who may have an interest in blocking certain processes. There is therefore a cautionary tale to be told here, in that the relationship between clients and coalitions and commitment, must be considered from the outset when planning or designing a programme. This is particularly pertinent for issues of climate change adaptation, which are often cross-cutting and likely to affect and be affected by various sectors and groups, at multiple levels of influence (Bulkeley and Newell 2010).

This linkage between commitment and clients and coalitions is intuitive, and was also hypothesized by Najam. When discussing the variable of clients and coalitions, he states that "with regards to commitment, the linkages are likely to be the strongest" (Najam 1995 p.54). Thus, it can be seen that these variables have a very strong influence on determining the nature of each other, even outside of the specific experience of the JPs.

Another linkage to ***commitment***, is the ***capacity*** variable. In this case, the JP experiences showed that having clear designation of responsibilities for JP implementation, particularly where the government counterparts were not only aware of their role, but also had the capacity to deliver, was

key in ensuring commitment of national counterparts. This interaction of capacity and commitment can also be linked to the concept of ownership above.

In contrast, another way in which commitment is linked to capacity, is where these two variables are at discordance with one another. For example, a number of examples were provided by the JPs where street-level implementers, although they had the will and theoretical commitment to engage in programme activities, are not able to actively do so due to capacity constraints (in terms of both human and financial resources). An example provided by the Mauritania JP:

> "[sub-national governments] don't have capacities, they don't have money, because the money is not channeling well from the central government to the local level. So even if they have will to change things, they cant because they don't have money."

Stemming from this is the relationship between ***capacity*** and ***institutional corridor***. Again, Najam also identified this, when he alluded to "the two-way influence between institutional context and administrative capacity… [that] will impact implementation effectiveness" (Najam 1995 p.51). The examples of this provided by the JPs were, for example, when the different capacity levels found at various implementation levels could be linked directly to the institutional framework. For example, the China JP representative discussed the different capacity levels found in different government agencies:

> "[in some] government ministries in China, they have local capacities. So they have a local network. There's some ministries that only have presence at the national level, but they don't have offices going all the way down… so when you're working with a government ministry that does, it makes working in the field more easier."

These relationships highlight the fact that capacity and commitment are not only influenced by a number of other variables, but themselves can also influence the execution of programme activities.

Another striking relationship with the ***clients and coalitions*** variable is that of ***institutional corridor*** (total co-occurrence count of 11). This relationship is characterized by the identification (either prior to or during the JP implementation) of clients and coalitions within the existing institutional framework, who could either support or actively block the JP processes. For example, at the national level, the ways in which the JP worked through the institutional framework could create blocking coalitions, by either failing to take some parties into account or by not including them in different JP processes. On the other hand, actively involving key actors within the existing institutional framework was deemed positive not only for the duration of the program, but also for the sustainability of program interventions. An example of this was provided by the Ethiopia JP. In this case, although during the course of the JP they had a limited impact on the policy level, it is believed that as all programme activities were carried out through the conduit and pre-existing framework of the Ministry of Environment, the work begun by the JP would still be carried through. Hence, by institutionalizing the aims of the JP within an existing framework, the clients of the program formed a supportive coalition.

Additionally, another aspect of the relationship between clients and coalitions and institutional corridor, is related to the comparative advantages of different institutional frameworks. In the

majority of JPs, for example, particular activities were implemented by those UN and government agencies that had a specialized advantage in the activity, e.g. FAO carried out agricultural activities while WHO carried out health-related aspects of the activities. Looking at external partnerships, however, in a number of instances NGOs or community-based organizations were deemed the most appropriate to carry out specific activities, as their institutional framework was a better fit. In some cases, such positive external coalitions were not capitalized upon. An example (aforementioned in Chapter 4) was provided by the Mozambique JP of the difficulties associated with UNEP carrying out field activities:

> "it's a question of UNEP rules and regulations, we're not really geared to delivering in the field."

It is clear that the institutional framework can greatly affect the types of activities that can be carried out, as well as their appropriateness to the specific problem at hand. This issue of institutional fit, and partnering the correct institutional form with function, has been raised as an important point in the literature on institutional relevance to adequately addressing environmental concerns (Young 2002). The quote above also highlights the fact that in certain circumstances, a conscious choice must be made as to which institutional contexts are the best fit for certain activities. In some cases, this may require the delegation of different roles and responsibilities to external partners of a different institutional form, i.e. coalitions or clients.

The relationship between ***institutional corridor*** and ***clients and coalitions*** can also extend to include the ***capacity*** variable. For example, at the local level, the existing institutional framework and capacity levels of civil society and/or government determined which clients and/or coalitions were brought into the JP work. For example, in Bosnia and Herzegovina high levels of civil society capacity allowed the JP to select NGOs who could actively carry out the work required, and garner the necessary support for the work to go through. In contrast, the communities in which the Mauritania JP worked often had low capacity levels, which could lead to the existing NGOs having a monopolistic role on JP activity selection. These examples show a complex relationship, and how capacity levels, clients and coalitions, and institutional corridor can impact upon one another. This is a particularly important point for those UN agencies that don't themselves have strong implementing capacity (like UNEP, as mentioned above). These agencies by definition must rely on partners with reliable capacity to deliver.

A next outstanding relationship is between ***capacity*** and ***clients and coalitions*** (total co-occurrence count of 10). This relationship was highlighted by Najam, who stated that "the linkage [of capacity] with clients and coalitions, although less obvious, is… critical" (Najam 1995 p.51). In the identification and selection of clients and coalitions, for example, existing capacity levels can be a determinant factor in this process. An example is if targeted beneficiaries are expected to have certain existing capacity levels in order to facilitate programme implementation. Moreover, the nature of capacities found in different clients and coalitions may also affect programme delivery as well as support.

In the example provided above of Bosnia and Herzegovina, for instance, the local governance activities were facilitated largely through select governments who already had high capacities, and could spread their own work to others through a peer-review process. On the other hand, there

were examples such as in Turkey where they experienced differentiated capacity levels. In this case, despite the high capacities of technical staff with respect to climate change science, at the level of political decisions makers they faced very low capacity levels in the understanding of climate change and impacts. As a result of this, at the government decision making level the JP faced a great deal of opposition to the program in certain sectors. This was only remediated through targeted capacity development measures.

A relatively strong relationship was also seen between the ***institutional corridor*** and ***content*** variables (total co-occurrence count of 9). This relationship is based largely on how the different JPs designed their specific activities using the countries' existing institutional framework. For example, at the policy level of environmental mainstreaming, particular target clients and activities were identified using existing institutional frameworks. At the field level, the JPs often capitalized on existing institutional arrangements or frameworks – such as local government authorities or existing community-based organizations/cooperatives – and used these as channels to identify as well as deliver activities of the JPs. Therefore, the linkage between institutional corridor and content derives mostly from the goal and causal theory levels; by targeting existing institutional arrangements, the JPs designed their activities according to the gaps or opportunities found in these institutional frameworks. As mentioned above, utilization of existing institutional arrangements (both formal and informal), as opposed to investing time in creating new institutions, also seems a key factor in sustainability.

Another notable relationship is between ***capacity*** and ***content***. This is unsurprising, as capacity building measures have often been an in-built goal of the JPs. This point was raised by Najam, who pointed out that "the link between content and capacity is obvious in that the two will essentially define (and redefine) each other" (Najam 1995 p.51). The levels of existing capacity will determine the types of activities that can be implemented by a programme, and programme goals may further need to be redefined according to the types and levels of capacities found on the ground. This relationship was seen in a number of the JPs, and evidenced in both the interviews and submitted MDGF lessons learnt.

Often, the JPs that needed to be more flexible in programme activities were responding to unexpected capacity realities on-the-ground. This was particularly pertinent with respect to awareness or substantive knowledge of climate change issues. In a number of cases, such as in Turkey and Afghanistan[9], the JPs had to invest a lot of time and effort into building a common understanding of climate change vulnerability and adaptation needs to relevant government authorities. This was a point also verified by an external expert, who thought that a primary point of departure, of the role of international bodies in national-level climate change adaptation interventions, is to act as a conduit to first raise awareness of the issues, and the urgency surrounding these issues (Bart pers.comm.). However, it should also be noted that often the resistance or lack of awareness towards climate change in some JP contexts was due to general perceptions of climate change as anti-development . This is also unsurprising, as some countries may simply see climate change adaptation as a non-urgent issue compared to other more pressing needs

[9] Although Afghanistan was not included in the formal interview sample (i.e. not according to the structured interview format), I held separate discussions with this JP which allows some conclusions to be made based on this.

such as health and education (Deri pers.comm. and Füssel 2007). Additionally, there is also a strong narrative in developing countries which links responsibility for climate change to developed countries, thus relieving developing nations' responsibilities towards climate change. However, this view is largely directed towards mitigation efforts, and sometimes the adaptation narrative can be lost in this wider discourse. The supposed tension between development and climate change can also be seen as a simple matter of perspective, and a number of the JPs responded to this by investing efforts to alter these perceptions and mindset. Thus, the content (i.e. activities) of the JPs had to be adjusted accordingly in a number of cases, in response to these capacity/awareness levels.

These relationships between ***content***, ***institutional corridor*** and ***capacities*** can also be seen in light of the general capacity or institutional requirements required for public management of an issue as complex as adaptation to climate change. The discussion of vulnerabilities to climate change in previous chapters showed how vulnerability is a function of not only physical impact, but also the capacity and abilities of socio-institutional frameworks to respond to these impacts. It has been pointed out that those countries which are already highly skilled in long-term public planning management will be in a better position to prepare for and respond to the impending effects of climate change (Bart pers.comm.). Those with low capacities in this regard, however, are those more vulnerable to climate change, hence interventions should target the capacities of public planning administrations (Bart pers.comm.). Many regions targeted by the JPs are vulnerable to climate change arguably because of these low capacity levels, thus the content of the programmes are in many ways aimed towards improving the capacities of existing institutions to be able to respond to the threats of climate change, and thus adapt effectively.

Another relationship is between the ***content*** and ***commitment*** variables. From the JP experiences, this relationship seems to be factored in the ways the programme goals and methods were chosen. Typically, it can be seen that high levels of inclusion of different partners – from the *beginning* of the process – has had a great influence on commitment levels, ensuring their support not only during the process of JP implementation, but arguably will maintain commitment to the climate change arena even after JP closure. This point has high resonance with the point raised earlier in this section, of the relationship between ***clients and coalitions*** and ***commitment***, and early inclusion of stakeholders.

The inclusion of different stakeholders, which can be understood as a participatory approach, was in all cases a part of the initial programme design (i.e. goals under content), reflecting the UN principle of participation (UN 2008). However, the degrees to which participation at different levels was actually implemented differed significantly between the JPs, and the effect of these can be seen in the commitment levels of the JP partners.

These potential relationships were highlighted by Najam: "the goal saliency is likely to influence both the commitment of the implementers and the makeup of actor coalitions opposing or supporting particular policies" (Najam 1995 p.40). Thus, not only the types of goals, but also the ways in which such goals are identified and subsequent activities chosen can greatly influence implementation effectiveness through types of support garnered, from different groups.

Finally, there are the relationships with the environmental conditions variable. Given that this factor appeared the least in the interviews, when compared to the other five variables, it also had the least

tendency to be related to other variables. In fact, the variable of environmental conditions is the only one which exhibited no relationship whatsoever to two of the variables – capacity and institutional corridor. However, the most commonly occurring relationship for this variable was with content (total co-occurrence of 5 counts).

The relationship between ***environmental conditions*** and ***content*** was unsurprising first of all due to the nature of the JP activities. They were targeting climate change impacts, of which the activities invariably respond in some way to environmental conditions. In a number of instances, the JP interventions were primarily targeting specific environmental conditions, such as increased variability in dryland/desert environments (Ethiopia, Mauritania, Mozambique and Egypt), or in response to incidences of extreme and unanticipated climatic events (Peru and Colombia), and in other cases related directly to water management issues (Turkey, China, and Jordan). Thus, the goals and methods chosen (which both fall under content) were directly linked to existing or projected environmental conditions.

What is also interesting in this relationship between environmental conditions and content, is that the different socio-environmental conditions also influenced the ways in which a causal theory (also under content) was developed for the different JPs. This can be seen in the different methods undertaken to conduct baseline studies. For example, due to its arid climate, the Jordan JP was dealing largely with water-related issues therefore focused on conducting a GCM in the initial stages of the programme. On the other hand, Mauritania also being an arid climate, but a less economically developed nation with a high reliance on subsistence farming, placed higher emphasis on conducting vulnerability assessments. These methods thus determined the identified influencing factors on socio-environmental conditions, while also identifying appropriate remediatory measures for climate change adaptation.

The multifaceted relationships described above, resonate strongly with a study carried out by Cash et al. (2002), where they investigated the key factors in transferring the knowledge from environmental assessments into practical action. In this study, the three factors of salience, credibility and legitimacy where highlighted (Cash et al. 2002):

- Salience – the relevance of information to decision making of various actors.
- Credibility – how scientifically plausible an actor views information.
- Legitimacy – if the process of knowledge creation is perceived as unbiased.

All three of these factors have resonance to the key variables, and relationships, described above. Salience is linked closely to the capacity levels of actors receiving the information, the realities of environmental conditions and points of comparison, and also the type of institutional frameworks these types of information are being directed at. Credibility also links closely to capacity levels, as well as the content of an information source (e.g. how an issue has been problematized, and the process of this problematization). Legitimacy is linked clearly to content, clients and coalitions as well as commitment.

The resonance of the interview results, both of isolated variables and their relationships to one another, with external sources, including expert opinion and research papers, highlights the validity of the research results. Further discussion and conclusions are provided in Chapter 6.

5.2. Significance

This section provides the basis for answering the secondary research question of this thesis (RQ2):

What factors from the 5C+ Protocol, and their relationships, are the most significant from the experience of the JPs?

To begin with, there is a need to define the criteria for determining which factors and relationships are 'significant'. This is based largely on qualitative impressions of the interviews, and analysis, supported by quantitative analysis.

The first consideration is total counts of the codes.

Quantitatively, the number of times a variable appears is the first indication of significance. The higher a variable has appeared in the interviews, the higher its significance. Based on the interviews, the total counts for each of the variables are shown in Table 6 below.

Table 6: Total Counts by Variable

Clients and Coalitions	65
Content	60
Institutional Corridor	52
Commitment	40
Capacity	30
Environmental Conditions	26

As shown by the data, there is a large variation between the variable with the highest count (clients and collations with 65) and the lowest count (environmental conditions with 26). Relatively, therefore, the most significant factor is clients and coalitions. Following this are content (60) and institutional corridor (52). Based simply on their incidence in the interviews, these three can be considered the top significant factors from the experiences of the JPs.

As mentioned before, the relationships between factors can also be viewed quantitatively. Results of the co-occurences were displayed in Table 4 and Figure 10 (in Section 5.1. above).

The highest number of co-occurrences was seen with clients and coalitions/commitment (with a count of 19). Following this were: clients and coalitions/institutional corridor (11); and clients and coalitions/capacity (10). Based on the total number of counts alone, these three can be considered the most significant relationships.

However, counting occurrences and co-occurrences on their own do not tell the whole story of which variables and their relationships are most significant.

A second consideration is the distribution of the occurrences, and relationships, across the different countries in the interview sample. We therefore need to move beyond purely quantitative impressions towards a complementary qualitative approach.

Looking at the variables alone, while the counts show a significant variance between the highest and lowest occurrences, the fact that all of the variables were found amongst all of the countries – more than once – shows that, to some extent, they are all significant (results displayed in Table 7 below).

Table 7: Factor Distribution by Country (Total Counts)

Country	Content	Institutional Corridor	Commitment	Capacity	Clients and Coalitions	Environmental Conditions
B&H	10	3	6	3	5	2
China	5	4	4	7	4	2
Colombia	9	5	5	2	7	1
Egypt	3	5	4	2	4	4
Ethiopia	3	5	1	2	3	2
Jordan	4	5	3	2	4	2
Mauritania	4	6	6	3	12	1
Mozambique	9	8	4	6	11	5
Peru	4	4	2	1	7	4
Turkey	9	7	5	7	8	3

Any ranking system created, such as top three or top five variables, will simply be arbitrary. Arguably, all of these variables can be considered 'significant' (though given the small sample size not in the statistical sense), due to their wide distribution and multiple occurrences amongst all of the country JPs.

Moving to the relationships between the different variables, a slightly different pattern emerges when looking at the distribution between countries. Figure 11 below shows the relative strength of the relationships between variables, based on the relative number of countries that exhibited each of the relationships (please see Appendix A.2. for the detailed distribution). Similar to the figure above, the thickness of the line is relative to the strength of the relationship, but in this case the thickest line shows an occurrence of 10 (the highest possible, as there were 10 countries in the interview sample), ranging to no line, which shows that there was no occurrence (count of 0).

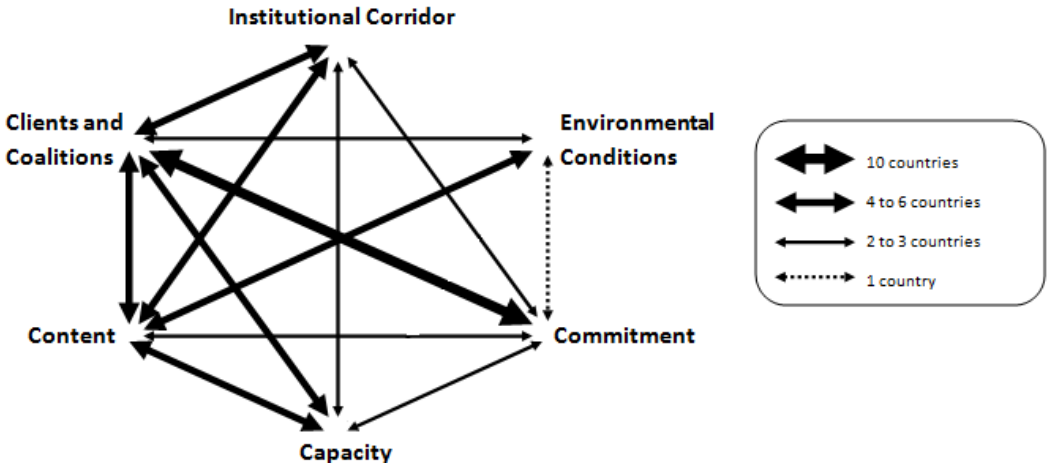


Fig. 11: Strength of Factor Relationships Based on Country Distribution

As shown on this graph, the relative strength of the different relationships is higher when based on country distribution as opposed to total counts. This indicates that there may be more significant variable relationships than indicated in Figure 10 above, which was based purely on the total number of counts of co-occurences.

Thus, 'significance' is a relative term, particularly if taking a purely quantitative approach versus a more qualitative one. Given that the data gathered and used in this thesis work is of a qualitative nature, a more qualitative approach is chosen to determine which are the most significant factors and relationships. Therefore, for the purpose of answering the secondary research question, the following criteria are used to help determine significance:

- The total number of counts
- Distribution between countries (i.e. number of countries which exhibit the factor or relationship)
- Confirmation of significant based on overarching themes from the interview results and qualitative analysis

All quantitative aspects of these criteria are combined in Figure 12 below, where: the size of each green point corresponds to the total number of counts overall; the thickness of the lines (relationships between the points) corresponds to the total number of counts for co-occurrence; and the colour of the line corresponds to the relationship distribution among the countries.
For example, institutional corridor has a total count of 52 (medium size green point), its co-occurence with clients and coalitions was mentioned a total of 11 times (medium thickness line), and its country distribution was among five countries (medium blue line).

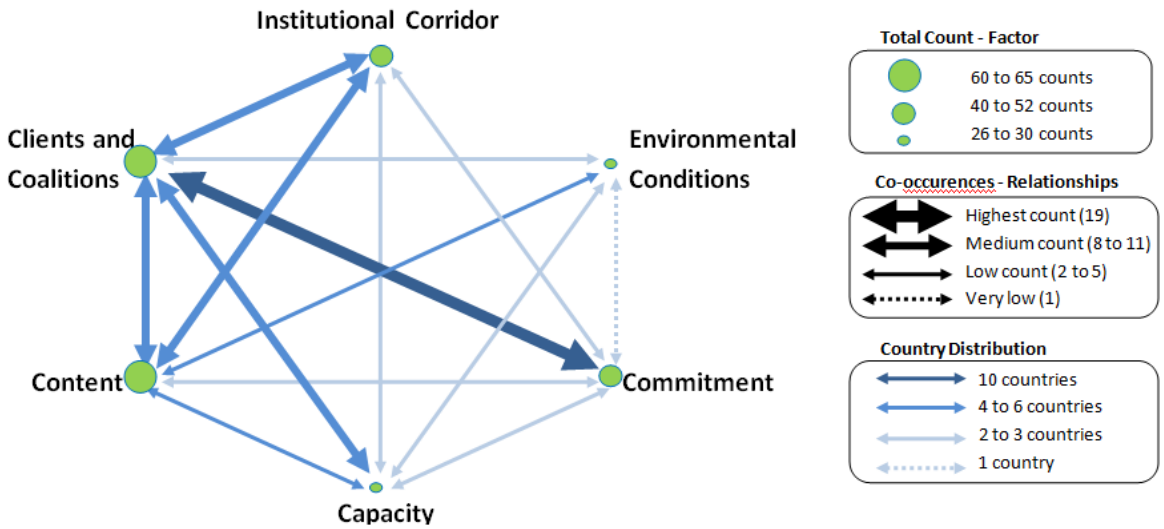


Fig. 12: Combined Counts, Relationships and Country Distribution

Based on these combined counts, relationships and country distributions, and from the preceding synthesis of interview results, an answer to RQ2 can be provided: ***the following factors and relationships*** (Table 8) ***are deemed of highest significance from the experience of the JPs:***

Table 8: Significant Factors and Relationships[10]

Factor	Relationship
Clients and Coalitions	Clients and Coalitions/Commitment
Content	Clients and Coalitions/Content
Institutional Corridor	Clients and Coalitions/Capacity
Commitment	Clients and Coalitions/Institutional Corridor
	Content/Institutional Corridor
	Content/Environmental Conditions

5.3. Applicability of the Framework

Based on all of the above discussions, it is possible to address the tertiary research question of this thesis (RQ3):

How applicable is the 5C+ Protocol to the analysis of climate change adaptation initiatives of international institutions?

Embedded within this research question are two major aims:

i) To explore the relationship between environmental conditions and other related factors in the original framework, to determine the extent to which the JP interventions have responded to environmental conditions in their work.

ii) To test the utility of using the basic form of the 5C Protocol framework, compared to the 5C+ Protocol, and its application and utility in analysing climate change adaptation interventions specifically (i.e. going beyond the scope of policy implementation only).

5.3.1. JP Responses to Environmental Conditions

Although this variable appeared the least in the interviews, it was still mentioned by all JP interviewees. The relatively low occurrence of this variable, however, can also be linked to the fact that environmental conditions were taken somewhat for granted – given the nature of the JP interventions (targeting climate change adaptation). In this way, the environmental variable can be

[10] Capacity and Environmental Conditions are not considered significant factors, first because they are the bottom two in total counts, and second because they only appear once each in the top significant relationships. However, they are included in two relationships that are considered significant.

Although Commitment does not have a very high total count, it is included as a significant factor, due to its strong correlation with the top variable of Clients and Coalitions.

Although the Content/Environmental Conditions relationship has a lower total count than the others (of 5 compared to others above 8), it is included as a significant relationship because it appears in the medium strength category for country distribution (medium blue line in Figure 12 above).

considered a 'state' variable – something that the JPs needed to address. The other variables can be considered 'response' variables, more dependent on the choices of the JPs.

The fact that the strongest relationship with the environmental conditions variable, was that of content (i.e. determining what the problems are, and responses to these problems), reveals that environmental conditions were incorporated into the program goals and designs. While the environmental conditions may not have had a strong or at least explicit relationship with or effect upon other variables, such as clients and coalitions or capacity, is to some extent a moot point as it is difficult to see how these could be related anyhow i.e., how environmental – or more specifically climate change – would act as a clearly separable influencing criterion of client selection, coalition building or capacity.

Therefore, I theorize that environmental conditions formed an important part of the content – goals and activities – of the JPs, which reveals that the JP work was responding specifically to the environmental (and socially-embedded) context of their target countries.

5.3.2. Utility of the 5C+ Protocol for Climate Change Adaptation

The 5C+ Protocol has served as a valuable framework to investigate the experience of the JPs work on climate change adaptation. As evidenced in this chapter, while the relationships between the different variables are complex and multifaceted, the lens of the 5C+ Protocol has allowed for a systematic and guided analysis of these relationships. Although there is a quantitative aspect to this discussion, the method of analysis chosen has also allowed for rich qualitative information to be gathered and taken into account. This systematic information gathering also provides a basis to develop conclusions and recommendations, based on the frame of the Protocol variables (please see Chapter 6 for this discussion).

However, this research revealed that the use of the 5C+ Protocol also has its limitations: low relevance of the environmental conditions variable; identification of specific climate change adaptation practices; and, missing elements of time and learning.

The relationships between the different variables in the 5C+ Protocol, displayed in the preceding Sections 5.1 and 5.2 showed the relative strength of these relationships. While all of the variables from the original 5C Protocol had medium to strong relationship strength to one another, the only 'outlier' variable was that of environmental conditions – the additional element in the 5C+ Protocol.

The fact that the strongest relationship with environmental conditions was that of content, and very weak (if any) relationships were exhibited with the other variables, indicates that the 'additional' environmental conditions variable is more likely a sub-component of the content variable (Bizikova pers. comm.). These results, based on the experience of the JPs, is indicative that in its original form, Najam's 5C Protocol has relevance for more narrowly addressing and analysing climate change adaptation issues, for which it was not specifically intended.

However, precaution should be taken in using the original 5C Protocol as is, in relation to climate change adaptation measures, as environmental conditions are a unique aspect of content. When using the framework as is, therefore, there must be added emphasis within the 'content' variable in looking at environmental conditions specifically, or else there is a danger in this element being lost.

Another limitation of the 5C Protocol is that, through lending a focus on institutional or procedural aspects of an intervention, it is limited in providing a basis for suggestions of specific climate change adaptation measures.[11] Therefore, it cannot be readily used to develop a set of best practices or guidelines specific to types of climate change adaptation activities.

Rather, the type of analysis based on the 5C Protocol has greater utility in procedural aspects of climate change adaptation interventions, such as partnerships and participatory implementation. This may have greater applicability to climate change activities, which have to be inherently context-specific (Schipper and Burton 2008). It is therefore difficult to determine specific transferable activities (outputs) within climate change adaptation, thereby focusing on process elements/characteristics arguably has greater utility.

A final limitation of the 5C Protocol, is that it does not include an in-built element of time and learning, which are critical components for climate change adaptation. An essential element of the management of complex and non-linear issues such as climate change, is the need for time frames which include the revision of elements, and corrective actions taken in response to changing circumstances (Swanson et al. 2004). Through the deliberate incorporation of time, this creates the conditions for learning to take place (Siebenhüner 2002). However, this time element of time will not automatically lead to learning, if this is not a deliberate part of an evaluation or assessment process (Siebenhüner and Arnold 2007). By not including a time element, the 5C Protocol remains limited in its ability to help facilitate learning processes. As it is, therefore, the 5C Protocol cannot be considered as a guiding framework for adaptive management in response to climate change. To do so, there must be specific recognition of this limitation.

To help facilitate learning, the 5C Protocol could be used as a common framework within a series of periodic assessments. The common framework can allow for analysis of the current state (characterized by the variables and their relationships), and comparison of these states among different time periods. These comparisons can be used to both track progress as well as highlight specific intervention needs. Therefore, organizations such as the UN could use the 5C Protocol as a quick analysis tool, prior, during and after programme implementation to identify specific challenges and opportunities related to the different variables, as well as identifying progress made in the different areas (Bizikova pers.comm.). The common framework can also be used as a point of comparison between different, but similar, programme implementers, helping to share experiences and methods to overcome procedural challenges.

Based on the above discussion, to answer RQ3, it can be concluded that ***the 5C Protocol in its original form can be applicable to the analysis of procedural aspects of climate change adaptation interventions of international institutions***, but also requires ***additional emphasis of environmental conditions within the 'content' variable and an incorporated element of time to facilitate learning.***

[11] While the identification of specific climate change adaptation measures was not a purpose of the thesis analysis, it is notable that the 5C Protocol does not have high relevance for this aspect of adaptation analysis.

"it's not about what it is, it's about what it can become."
— Dr. Seuss

Chapter 6: Conclusion and Recommendations

Since climate change adaptation emerged in the 1990s as a pressing need worldwide, numerous international institutions such as the UN have begun implementing measures to address this need. Climate change is a complex governance challenge, characterized by cross-sectoral impacts, uncertainty, long time frames, and non-linearities. To be successful, adaptation measures must take into account processes at multiple scales, and be inherently context-specific to suit the ecological conditions, socio-economic aspects and institutional framework of any given locale.

Within this context, the aim of this thesis was to address how international organizations, with emphasis on the UN, are able to translate their often broadly defined global mandates, and downscale them to suit the specific adaptation needs of given populations and ecosystems.

By taking a case study approach, this research investigated the climate change adaptation interventions of selected JPs operating under the MDGF environment and climate change window, implemented through the One UN framework to enhance the collaboration of UN agencies present in a country. Using the theoretical framework of the 5C+ Protocol, the experiences of the JPs were investigated in order to ascertain their abilities to respond to context-specific needs, as well as to highlight the opportunities and challenges found in these experiences. Primary data was collected through interviews, which were then analysed according to the 5C+ Protocol.

Results of this analysis (which were also reviewed by external adaptation experts) revealed which variables, and relationships, from the 5C+ Protocol were the most significant from the experience of the JPs. Based on these results, the secondary and tertiary research questions of this thesis (RQ2 and RQ3) were answered in Chapter 5.

6.1. Recommendations

Now we must move to the overarching purpose of this thesis, and answer the primary research question (RQ1):

How can international institutions such as the UN deliver their interventions to suit the needs of context-specific climate change adaptation activities?

In answering the primary research question, Figure 13 below provides a consolidated summary of ***recommendations for how, based on this research, international institutions can effectively downscale their adaptation aims to meet context specific requirements***:

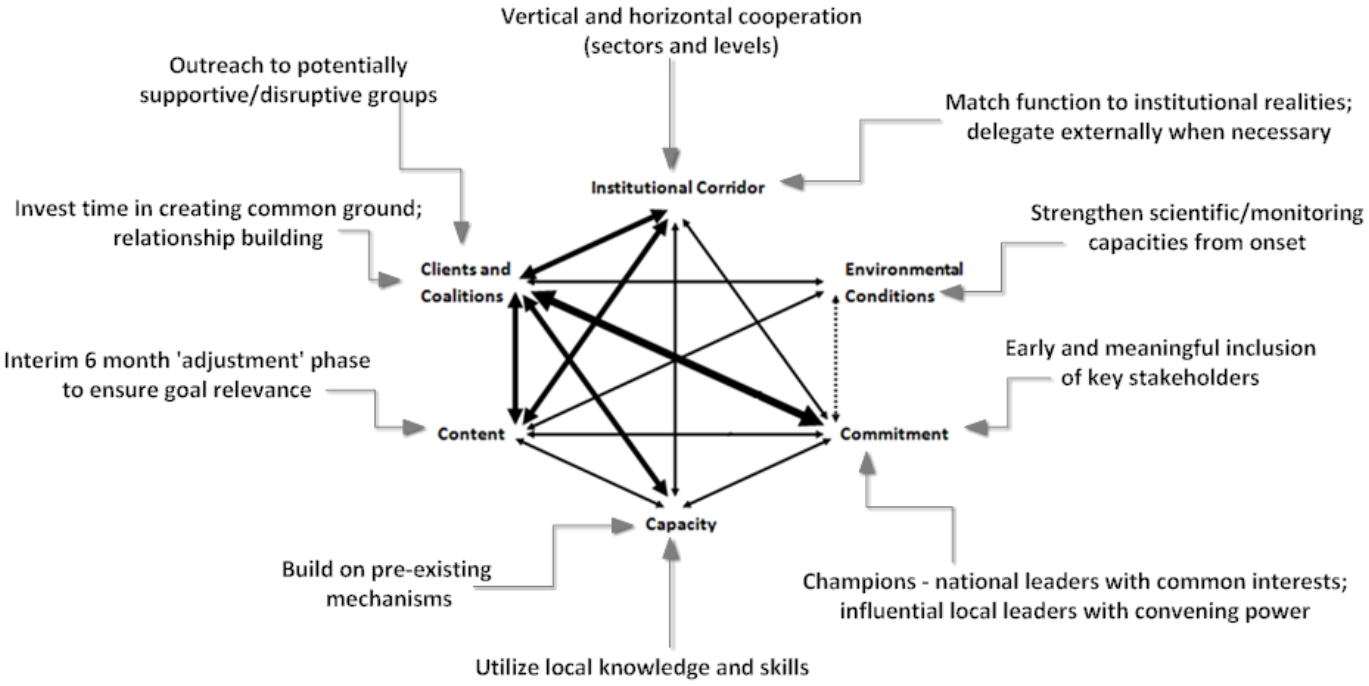


Fig. 13: Summary Recommendations Based on the 5C+ Protocol and JP Experiences

My research showed that the implementation of national and sub-national climate change adaptation activities, when derived from a general global mandate, poses specific implementation challenges. The recommendations displayed in Figure 13 above show a broad set of procedural measures which can aid international institutions such as the UN to address these challenges, and effectively deliver context-specific climate change adaptation interventions.

Yet to provide more practical focus, there is also a need to prioritize which are the most pertinent recommendations, based on the experience of the MDGF JPs and the results of this thesis research. The most significant challenges found in my research were related to: support and ownership of programme activities; identification of most relevant problems and solutions; and coordination across sectors and governance levels. These challenges and remediatory measures are discussed below.

- ***Support and ownership of programme activities*** (clients and coalitions/commitment):

This relates strongly to the early involvement of stakeholders in the design of the programme work. By identifying and then allowing for the meaningful participation of relevant stakeholders from an early stage, there is a greater potential to secure the necessary commitment and ownership needed to carry out adaptation activities. This point is also linked to the identification of influential champions (individuals or groups) who can advocate for the programme causes, and rally support from relevant clients and coalitions. For example, champions could be identified at the national level (high ranking officials who share common interests to the programme goals), and at the sub-national level (such as local leaders who have high legitimacy and convening power within their communities).

- ***Identification of most relevant problems and solutions*** (content):

This point also relates to the early inclusion of relevant stakeholders, as shown by the analysis of interlinkages between the variables. By incorporating the inputs of programme beneficiaries or partners early on – for example during the design stage – there is a higher likelihood that the most relevant problems and targeted activities for the intervention area can be identified. This is particularly relevant for adaptation measures that are being 'downscaled' from higher levels, thus may not have full contextual information of the specific intervention area. It also raises the potential for including the results of technical or scientific assessments as well as local knowledge, at an early stage in the process.

To facilitate this, it is suggested to intentionally include an initial period in the beginning of programmes for the design and reconceptualization of plans, allowing the input of relevant stakeholders to be included. Additionally, even later in the implementation stages the work should have sufficient flexibility to incorporate the significant perspective of stakeholders that may not have been included in initial stages. Such 'in-built' flexibility is necessary to help ensure maximum relevance of program activities, also supported by the adaptive management concept (Swanson et al. 2004)

- ***Coordination across sectors and governance levels*** (institutional corridor):

The majority of JPs faced significant challenges in coordinating their work not only across different sector interests (e.g. agriculture, water, health), but also between and across different governance types and levels (e.g. national government ministries, UN agencies, and local communities). Addressing the potential for fragmentation is essential to ensure the underlying competing interests and organizational mandates of these diverse institutions do not compromise addressing adaptation needs. These needs, by definition, often cut across institutional, geographic and other boundaries. To successfully manage issues as cross-cutting as climate change adaptation, therefore, there must be a concerted effort to enhance coordination and harmonization, and offer truly 'joint' implementation of activities.

These significant challenges discussed above clearly impact on programme effectiveness, adaptive capacities and sustainability of interventions, yet there are clear examples from the JPs that these challenges can be tackled.

For more details on these recommendations to improve the effectiveness of adaptation measures, please refer to Appendix A.3 which summarizes the JP experiences in more depth, delineated according to the six factors in the 5C+ Protocol, with description of challenges, approaches and success stories.

6.2. Concluding Remarks

Looking at the JP experiences, it is notable that the JP operating framework and types of issues being addressed were in many circumstances the first of their kind in countries of implementation. Jointly-run climate change adaptation interventions are still young for institutions such as the UN, with significant scope for learning. The experience and lessons from the work of the JPs are an important step towards improving the governance and management of climate change adaptation measures, to enhance effectiveness and build adaptive capacities of the most vulnerable populations.

However, this learning potential will not arise without targeted efforts. To be effective, adaptation measures must incorporate deliberate learning, to respond to the influence of various sectors, scales and levels, their changing circumstances and potential non-linearities associated with the effects of climate change (Berkhout et al. 2006). International institutions such as the UN must therefore engage in intentional and effective organizational learning and adaptation processes, both to allow necessary adjustments within a programme's life cycle, and to ensure that the relevant and valuable lessons from specific programme experiences can be accessed and used by others engaged in similar activities (Swanson et al. 2004, Swanson et al. 2010 and Walker et al. 2001). Moreover, given that the field of climate change adaptation is young – and the danger of not responding has high consequences, particularly for vulnerable populations – efforts towards such learning and information sharing should be enhanced.

Another cautionary point is related to the nature of prioritized adaptation activities. Adaptation to climate change is a long-term process, where building adaptive capacity (to respond to, and thus reduce vulnerabilities) in the face of climate change is key. Since climate change adaptation may require societies to respond/adapt to completely new and hard-to-predict extreme events or 'surprises' (Patt 1997), the project-cycle flows of traditional development interventions are an ill fit. There is a danger in climate change adaptation measures adopting these short project-cycle perspectives, particularly when adaptation is being integrated into existing development activities. Such project designs and time frames limit the relevance, flexibility and responsiveness of the work to adaptation needs.

If international institutions such as the UN truly want to implement effective climate change adaptation interventions, they must adopt a more long-term view that incorporates flexible project design and budgeting requirements, geared specifically towards building adaptive *capacities* rather than just adaptation activities (Folke et al. 2002). This will require concerted efforts and time to design and implement adaptation measures based on principles of meaningful joint planning and participation.

Adaptive, cross-scale and collaborative management approaches are key to ensuring international institutions are able to address the complexities and urgency associated with the needs of climate change adaptation. While planning through long time frames and deliberate learning efforts are integral to achieving these needs, an equally important challenge is the relevance of downscaling international initiatives to suit localized needs. The nature of climate change adaptation, in requiring a high level of context-relevance and specificity, requires that international institutions either invest the time and effort required to build relationships with beneficiaries, or alternatively forge strong relationships and delegate to key counterparts who may be a better fit to delivering such contextualized measures.

References

Adger, W., Lorenzoni, I. and O'Brien, K. (eds.). 2009. *Adapting to Climate Change: Thresholds, Values, Governance*. Cambridge University Press: Cambridge.

Alhaji, M. 2003. From Rio to Johannesburg: Reflections on the Role of International Legal Norms in Sustainable Development. *Georgetown International Environmental Law Review* October 2003.

Andresen, S. 2001. Global Environmental Governance: UN Fragmentation and Co-ordination. In *Yearbook of International Co-operation on Environment and Development 2001/02,* Thommessen, Ø. and Stokke, O. (eds.). Routledge: New York.

Argyris, C., and Schön, D. 1978. *Organizational Learning: A Theory of Action Perspective*. Reading, Mass: Addison Wesley.

Armitage, D., Marschke, M. and Plummer, R. 2008. Adaptive Co-management and the Paradox of Learning. *Global Environmental Change* 18: 86-98.

Barg, S. and Swanson, D. 2005. *Exploring the Definitions of Adaptive Policies*. International Institute for Sustainable Development, IISD-TERI-IDRC Adaptive Policies Project.

Berkes, F. 2009. Evolution of Co-management: Role of Knowledge Generation, Bridging Organizations and Social Learning. *Journal of Environmental Management* 90: 1692

Berkhout, F., Hertin, J. and Gann, D. 2006. Learning to Adapt: Organisational Adaptation to Climate Change Impacts. *Climatic Change* 78: 135-156.

Bulkeley, H. and Newell, P. 2010. *Governing Climate Change*. Routledge: New York.

CIDA (Canadian International Development Agency). 2004. CIDA Evaluation Guide. Government of Canada, Evaluation Division Performance Review Branch. Ottawa, Canada.

Cash, D. et al. 2002. *Salience, Credibility, Legitimacy and Boundaries: Linking, Research, Assessment and Decision Making*. John F. Kennedy School of Government, Harvard University, Faculty Research Working Paper Series. RWP02-046.

Cash, D. et al. 2006. Scale and Cross-Scale Dynamics: Governance and Information in a Multilevel World. *Ecology and Society* 11(2): 8 [online].

Conrad, B. and Nielsen, S. 2011. Evaluating Adaptation to Climate Change: The Challenge of Defining Success. Global Environmental Facility, *The Green Line.* URL: http://www.thegef.org/gef/node/5404 [consulted May 23 2012].

Dalal-Clayton, B. and Bass, S. 2009. *The challenges of environmental mainstreaming: Experience of integrating environment into development institutions and development*. International Institute for Environment and Development (UK).

Dang, H., Michaelowa, A. and Tuan, D. 2003. Synergy of adaptation and mitigation strategies in the context of sustainable development: the case of Vietnam. *Climate Policy* 3: S81-S96.

Davies, R. and Dart, J. 2005. The Most Significant Change (MSC) Technique: A Guide to Its Use. *CARE International and Oxfam*. URL: http://www.mande.co.uk/docs/MSCGuide.pdf [consulted May 23 2012].

DeGarmo, Denise K. 2005. The History of International Environmentalism. In *International Environmental Treaties and State Behaviour*. Routledge: New York. 31-71.

DeSombre, E. 2006. *Global Environmental Institutions.* Routledge: New York.

Earl, S., Carden, F. and Smutylo, T. 2001. Outcome Mapping: Building Learning and Reflection into Development Programs. International Development Research Centre, Ottawa, doc.3.

FAO (Food and Agriculture Organization). 2012. About FAO. URL: http://www.fao.org/about/en/ [consulted 15 March 2012].

Folke, C. et al. 2002. Resilience and Sustainable Development: Building Adaptive Capacity in a World of Transformations. *A Journal of the Human Environment* 31(5):437-440

Füssel, H. 2007. Adaptation planning for climate change: concepts, assessment approaches, and key lessons. *Sustainability Science* 2: 265-275.

GEF (Global Environment Facility). 2010. About GEF: What is the GEF. URL: http://www.thegef.org/gef/whatisgef [consulted 15 March 2012].

Giddens, A. 2009. *The Politics of Climate Change*. Polity Press: Cambridge.

Gunningham, N. 2009. The New Collaborative Environmental Governance: The Localization of Regulation. *Journal of Law and Society* 36(1): 145-166.

Gupta, J. et al. 2008. *Institutions for Climate Change: A Method To Assess the Inherent Characteristics of Institutions to Enable the Adaptive Capacity of Society*. Institute for Environmental Studies, Vrije Universiteit, Amsterdam, the Netherlands. Report W-08/21

Hansen, J. et al. 2008. Target atmospheric CO_2: Where should humanity aim? *Open Atmospheric Science Journal* 2: 217-231.

Hall, A. et al. 2003. From Measuring Impact to Learning Institutional Lessons: An Innovation Systems Perspective on Improving the Management of International Agricultural Research. *Agricultural Systems* 78: 213-241.

Halpern, S. 1992. *United Nations Conference on Environment and Development: Process and documentation*. Providence, RI: Academic Council for the United Nations System (ACUNS).

Hedger, M. et al. 2008. Desk review: Evaluation of adaptation to climate change from a development perspective. Institute of Development Studies. Commissioned by the Global Environmental Facility (GEF) Evaluation Office and the UK Department for International Development (DFID). No. 877338.

Huitema, D. et al. 2011. The evaluation of climate policy: theory and emerging practice in Europe. *Policy Sciences* 44(2): 179-198.

Huq, S. and Reid, H. 2004. Mainstreaming Adaptation in Development. *Institute of Development Studies (IDS) Bulletin* 35(3): 15-21.

IPCC (Intergovernmental Panel on Climate Change). 1995. *IPCC Second Assessment Report: Climate Change 1995*. Cambridge: Cambridge University Press.

_____. 2001. *IPCC Third Assessment Report: Climate Change 2001*. Cambridge: Cambridge University Press.

_____. 2007. *Contribution of Working Group II to the Fourth Assessment Report of the IPCC*. Parry, M., Canziani, O., Palutikof, J., van der Linden, P. and Hanson, C. (eds). Cambridge: Cambridge University Press.

_____. 2012. *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation*. Field, C., V. Barros, T.F. Stocker, D. Qin, D.J. Dokken, K.L. Ebi, M.D. Mastrandrea, K.J. Mach,
G.-K. Plattner, S.K. Allen, M. Tignor, and P.M. Midgley (eds.). Cambridge: Cambridge University Press.

_____. [n.d]. IPCC Organization. URL: http://www.ipcc.ch/organization/organization.shtml#.T3nDMzGP-F4 [consulted 20 March 2012].

J-PAL (Abdul Latif Jameel Poverty Action Lab). [n.d.]. Methodology Overview. Massachusetts Institute of Technology. URL: http://www.povertyactionlab.org/methodology [consulted May 23 2012].

Kasperson, R. and Kasperson, J. 2001. Climate Change, Vulnerability and Social Justice. Stockholm Environment Institute, Risk and Vulnerability Program. Stockholm, Sweden.

Kelly, P. and Adger, W. 2000. Theory and practice in assessing vulnerability to climate change and facilitating adaptation. *Climatic Change* 47 (4): 325-352.

Knight, W. 2001. Learning in the United Nations. In *Adapting the United Nations to a Postmodern Era: Lessons Learned*. Knight, W. (ed.).New York: Palgrave Macmillan.

Lenton, T. et al. 2007. Tipping elements in the Earth's climate system. *Proceedings of the National Academy of Sciences of the United States of America (PNAS)* 105(6): 1786-1793.

Le Quéré, C. et al. 2009. Trends in the sources and sinks of carbon dioxide. *Nature Geoscience* 2: 831 – 836.

Mannion, A. 1991. *Global Environmental Change: a Natural and Cultural Environmental History.* Harlow: Longman Scientific & Technical.

MDGF (Millenium Development Goal Achievement Fund). 2011a. MDG Achievement Fund: Lessons Learned. Montevideo, Uruguay, 8-10 November 2011.

_____. 2011b. MDG-F About Us. URL: MDG-F http://www.mdgfund.org/aboutus [consulted 20 September 2011].

_____. 2011c. Knowledge Management. URL: http://www.mdgfund.org/content/knowledgemanagement [consulted 20 September 2011].

_____. 2011d. Environment and Climate Change. URL: http://www.mdgfund.org/content/environmentandclimatechange [consulted 20 September 2011].

MEA (Millenium Ecosystem Assessment). 2005. *Ecosystems and Human Well-being: Current State and Trends, Volume 1*. Hassan, R., Scholes, R., Ash, N. (eds.). Washington: Island Press.

Meadowcroft, J. 2010. *Climate Change Governance*. Background Paper to the 2010 World Development Report. The World Bank: Policy Research Working Paper 4941.

Mitchell, R. et al. (eds.) 2006. *Global Environmental Assessments: Information and Influence*. Cambridge: MIT Press.

Morra-Imas, L. and Rist, R. 2009. The Road to Results: Designing and Conducting Effective Development Evaluations. The International Bank for Reconstruction and Development/The World Bank, Washington, D.C.

Najam, A. 1995. *Learning from the Literature on Policy Implementation: A Synthesis Perspective*. International Institute for Applied Systems Analysis, Austria. Working Paper: WP-95-61.

_____. 2005. Developing Countries and Global Environmental Governance: From Contestation to Participation to Engagement. *International Environmental Agreements* 5: 303-321.

OECD (Organization for Economic Co-operation and Development). 2011. About the OECD. URL: http://www.oecd.org/pages/0,3417,en_36734052_36734103_1_1_1_1_1,00.html [consulted March 30 2012].

Olmos, S. 2001. *Vulnerability and Adaptation to Climate Change: Concepts, Issues, Assessment Methods*. Climate Change Knowledge Network, Foundation Paper.

Patt, A. 1997. *Assessing Extreme Outcomes: The Strategic Outcome of Low Probability Impacts of Climate Change*. ENRP Discussion Paper E-97-10, Kennedy School of Government, Harvard University.

Patton, M. 2001. Evaluation, Knowledge Management, Best Practices, and High Quality Lessons Learned. *American Journal of Evaluation* 22(3): 329-336.

Pelling, M. and High, C. 2005. *Social Learning and Adaptation to Climate Change*. Paper presented at the Integrated Planning Against Risk series seminar on Mainstreaming Disaster Risk Management: Organisational Learning and Change. 21 April 2005, London.

Peterson, G. et al. 1997. Uncertainty, Climate Change, and Adaptive Management. *Conservation Ecology* [online] 1(2): 4. Available online. URL: http://www.consecol.org/vol1/iss2/art4/ [consulted May 24 2012].

Pintér, L. 2002. Making Global Integrated Environmental Assessment and Reporting Matter. University of Minnesota.

_____. 2005. Conceptual framework for the Lake Balaton integrated vulnerability assessment and adaptation project. Winnipeg: IISD.

Pittock, A. and Jones, R. 2000. Adaptation to what and why? *Environmental Monitoring and Assessment* 61(1): 9-35.

Ribot, J. et al. 1996. Climate variation, vulnerability and sustainable development in the semi-arid tropics. In *Climate Variability, Climate Change and Social Vulnerability in the Semi-Arid Tropics*, Ribot, J., Magalhaes, A. and Panagides, S. (eds.). Cambridge University Press : Cambridge.

Senge, P. 1990. *The Fifth Discipline: The Art and Practice of the Learning Organization*. London: Random House.

Senge, P. et. al. 1994. *The Fifth Discipline Fieldbook: Strategies and Tools for Building a Learning Organization*. New York: Doubleday.

Shakun, J.D et al. 2012. Global warming preceded by increasing carbon dioxide concentrations during the last deglaciation. *Nature* 484: 49-54.

Schipper, E. and Burton, I. 2008. *The Earthscan Reader on Adaptation to Climate Change*. Taylor & Francis Ltd: London.

Siebenhüner, B. 2002. How Do Scientific Assessments Learn? Part 1. Conceptual Framework and Case Study of the IPCC. *Environmental Science & Policy* 5: 411-420.

Siebenhüner, B. and Arnold, M. 2007. Organisational Learning to Manage Sustainable Development. *Business Strategy and the Environment* 16: 339-353.

Simons, N. 2011. *Reforming International Environmental Governance: One Year Ahead of Rio 2012*. Prepared for: Workshop on International Environmental Governance: Grounding Policy Reform in Rigorous Analysis, Berne, 26-28 June 2011.

Social Learning Group. 2001. Learning to Manage Global Environmental Risks – Volume 1: A Comparative History of Social Responses to Climate Change, Ozone Depletion, and Acid Rain. MIT Press: Massachusetts.

Swanson, D. et al. 2004. National Strategies for Sustainable Development: Challenges, Approaches and Innovations in Strategic and Co-ordinated Action. International Institute for Sustainable Development and Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH.

Swanson, D. et al. 2010. Seven tools for creating adaptive policies. *Technological Forecasting and Social Change* 77(6): 924-939.

Tompkins, E. and Adger, N. 2003. *Building resilience to climate change through adaptive management of natural resources*. Tyndall Centre for Climate Change Research, Working Paper No. 27. School of Environmental Sciences, University of East Anglia.

Tschakert, P. and Dietrich, K. 2010. Anticipatory Learning for Climate Change Adaptation and Resilience. *Ecology and Society* 15(2): 11.

Turner, B. et al. 2003. A framework for vulnerability analysis in sustainability science. *Proceedings of the National Academy of Sciences of the United States of America (PNAS)* 100(14): 8074-8079.

UN (United Nations).2008. Acting on Climate Change: The UN System Delivering as One. Prepared by the United Nations System Chief Executive Board for Coordination. Climate Change DPI/2526.

_____. 2010. Millennium Development Goals Home. URL: http://www.un.org/millenniumgoals/ [consulted February 25 2012].

UNDG (United Nations Development Group). 2010. Delivering as One: Making the UN system more coherent, effective and efficient. URL: http://www.undg.org/?P=7 [consulted April 03 2012].

UNDP (United Nations Development Program). 2009. Handbook on Planning, Monitoring and Evaluating for Development Results. URL: http://web.undp.org/evaluation/handbook/index.html [consulted May 23 2012].

UNEP (United Nations Environment Program). 2007. *Lessons Learned from Evaluation: A Platform for Sharing Knowledge*. Special Study Paper Number 2, UNEP Evaluation and Oversight Unit, Nairobi, Kenya.

UNEP/GRID. 2007. Historical trends in carbon dioxide concentrations and temperature, on a geological and recent time scale. URL: http://www.grida.no/graphicslib/detail/historical-trends-in-carbon-dioxide-concentrations-and-temperature-on-a-geological-and-recent-time-scale_a210 [consulted February 20 2012].

UNFCCC (United Nations Framework Convention on Climate Change). 2012. First steps to a safer future: Introducing the United Nations Framework Convention on Climate Change. URL: http://unfccc.int/essential_background/convention/items/6036.php [consulted March 3 2012].

UNGA (United Nations General Assembly). 1998. *Environment and Human Settlement*. A/53/463, 6 October 1998.

UNSG HLP (United Nations Secretary General's High Level Panel on UN System-Wide Coherence). 2006. *Delivering as One: Report of the Secretary-General's High Level Panel*. United Nations: New York.

Walker, W., Rahman, S. and Cave, J. 2001. Adaptive policies, policy analysis, and policy-making. *European Journal of Operational Research* 128(2): 282-289.

Wallace, M., Cortner, H. and Burke, S. 1995. Review of Policy Evaluation in Natural Resources. *Society and Natural Resources* 8 : 35-47.

Weber, R., Aha, D., and Becerra-Fernandez, I. 2001. Intelligent Lessons Learned Systems. *International Journal of Expert Systems Research and Applications* 20(1): 17-34.

WikiCommons (Wikimedia Commons). 2005. File:BlankMap-World-1985.png. URL: http://en.wikipedia.org/wiki/File:BlankMap-World-1985.png#filelinks [consulted March 03 2012].

WMO (World Meteorological Organization). 2012. WMO annual statement confirms 2011 as 11th warmest on record: Climate change accelerated in 2001-2010, according to preliminary assessment.

Press Release No. 943. URL: http://www.wmo.int/pages/mediacentre/press_releases/pr_943_en.html [consulted February 20 2012].

World Bank. 2011. *Planning, Monitoring, and Evaluation: Methods and Tools for Poverty and Inequality Reduction Programs*. Poverty Reduction and Economic Management Unit, Poverty Reduction and Equity Unit, World Bank, Washington, D.C.

WRI (World Resources Institute). 2003. World Resources 2002-2004: Decisions for the Earth: Balance, voice, and power. WRI, Washington, DC.

Young, O. 2002. *The Institutional Dimensions of Environmental Change: Fit, Interplay, and Scale*. Cambridge, MA: MIT Press.

Personal Communication

Bart, István. Director of the Hungarian Energy Efficiency Institute (*Magyar Energiahatékonysági Intézet*). Former officer in the European Commission Directorate-General for Climate Action, Adaptation Unit. Personal interview, Budapest. 23 May 2012.

Bizikova, Livia. Project Manager at International Institute for Sustainable Development, whose recent work is focused on adaptation to climate change. Email communication. 22 May 2012.

Deri, Andrea. Independent consultant specialised on capacity development, including the role of learning and knowledge systems in resilience and adaptive capacity. Personal interview, online. 6 May 2012.

Appendices

A.1. Interview Format

CONTENT

Tell me about the general issues the JP aimed to address

- How were the issues chosen?
    - What sorts of causes were attributed to these issues?
    - What methods were chosen to address these issues?

ENVIRONMENTAL CONDITIONS

How would you describe the environmental conditions the JP was dealing with?

- How were environmental characteristics taken into account?

INSTITUTIONAL CORRIDOR

Could you describe how things were organized and administered through the JP?

- How were different organizations involved in the execution of the JP?

CAPACITY

What opportunities and/or challenges were there in terms of the JP administration?

- How were the capacity levels of different parties?

CLIENTS AND COALITIONS

Was anyone (individual, organization, or other group) particularly influential?

- How did different stakeholders affect/influence the JP activities?

COMMITMENT

Tell me about how the JP has or hasn't been supported by different responsible parties.

- How would you describe the levels of commitment by different parties?

A.2. Factor Relationships and Country Distribution

	B&H	China	Colombia	Egypt	Ethiopia	Jordan	Mauritania	Mozambique	Peru	Turkey
Clients and Coalitions/ Commitment	X	X	X	X	X	X	X	X	X	X
Clients and Coalitions/ Institutional Corridor				X			X	X	X	X
Capacity/ Clients and Coalitions		X				X	X	X	X	X
Content/ Institutional Corridor		X	X		X			X	X	X
Clients and Coalitions/Content			X			X	X		X	X
Content/Environmental Conditions				X		X		X		X
Commitment/Content	X					X				X
Capacity/Institutional Corridor							X	X		X
Capacity/Content	X	X	X							X
Commitment/ Institutional Corridor		X					X	X		
Capacity/Commitment	X	X			X					
Clients and Coalitions/ Environmental Conditions								X	X	
Commitment/ Environmental Conditions									X	
Capacity/Environmental Conditions										
Environmental Conditions/ Institutional Corridor										

A.3. Summary: JP Challenges, Approaches and Success Stories

FACTOR	CHALLENGES	APPROACHES	SUCCESS STORIES
Content	Constraints in integrating study results and early participation in program design and activities	- build in 6 month 'adjustment period' into program design [suggested]	
	Tension between income needs and environmental resource use	- linking climate change adaptation activities to livelihood (income) diversification - using integrated social/economic methods	**Mozambique**: developed a wide range of natural resource management/income generation activities **China**: inter-disciplinary teams used for assessment and planning
	Lack of awareness/hostility towards climate change issues[1]	- invest time into awareness raising and sensitization activities	**Turkey**: rebranding of climate change to government officials: the 'new sustainable development'
	Extreme political events (state government overthrown)	- freeze government-related activities - new partnerships formed with CSOs	**Mauritania**: prioritized meeting local community needs through enhancing CSO involvement
Institutional Corridor	No culture of joint program implementation	- joint management organizational set up - coordination of field visits	**Egypt**: regular cross-component meetings **Turkey**: self-identification as a joint unit, not individual UN agencies
	Multiple conflicting/overlapping reporting requirements		
	Non-resident agencies' difficulty in forging relationships and delivering activities on-the-ground	- identifying strong and capable partner agencies - delegation of responsibilities to external partners e.g. NGOs	
	Sustainability of intervention aims	- build on existing institutional frameworks, and strengthen them	**Ethiopia**: all activities run through existing MoE structure, who now can carry through the work post-JP
Commitment	Low levels of ownership	- close consultation with national counterparts during all stages (from	**Jordan**: strategic JP positions given to government counterparts

FACTOR	CHALLENGES	APPROACHES	SUCCESS STORIES
		inception) - importance of early involvement - clear designation of responsibilities (lead ministry) - identification of champions	**B&H**: local government champions providing outreach/advice to counterparts **Colombia**: extensive participatory process (re-design)
	Perception of climate change as a non-urgent, anti development issue[1]		
	Budgetary limitations		
	Maintaining interest after JP closure	- communication efforts	**Turkey**: documentary on Sayhan River Basin **Egypt**: documentary on climate change
Capacity	Low domestic technical capabilities (scientific assessments)[3]	- Mixed use of expert/local knowledge - partnering specialized (external) experts with domestic technical staff: learning by doing - GCM, VIA, watershed assessment, perception analysis	**Turkey**: call for local proposals, followed up by expert consultation **Colombia**: scientific and local knowledge combined to create place-specific VIA and monitoring techniques
	Limited long-term and complex public management capacities		
	Limited administrative/financial resources		
	Weak civil society		
	Poor capacity building measures (ad-hoc)	- include capacity building activities deliberately, from program design stage	
Clients and Coalitions	Perception that climate change interventions will negatively affect interests (incentive to block)	- bringing opponents into dialogue to try and explain common ground - engage external actors pursuing similar goals	**Jordan**: invested time in clearly articulating aims to all counterparts **Mozambique**: partnered with other NGOs pursuing similar activities
	Lack of support from key parties not fully involved in the process	- engage in dialogue	**Mozambique**: interest and ownership of MoE gained after one year of struggles

FACTOR	CHALLENGES	APPROACHES	SUCCESS STORIES
	Lack of interest from local communities	- identification of influential local leaders/groups - active participatory process	**Mauritania & Mozambique**: identified most influential community members to initiate JP awareness
Environmental Conditions	Marginalized areas/social groups – logistical access difficulties	- coordinating field visits - setting up field offices	**Mozambique**: set up UN field offices in difficult-to-access district
	Immediate climate change issues already apparent, affecting ecosystems/communities	- rapid implementation of activities, particularly agriculture and water management - short- and long-term aims phased in concurrently	**Peru**: set up agricultural field schools and replicas spread very quickly
	Unique socio-ecological contexts even within one intervention area	- embrace differentiated approaches - use local inputs as much as possible	**China**: adapted agricultural training programs to different communities