

Equator Principles and Climate Change Issues:  
Examining the EPs' Climate Change Policies and Analyzing the Likely Effectiveness of  
these Policies

by

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## **Author's Declaration**

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

## Abstract

Climate change is a global environmental issue that adversely affects economic activities; on the other hand, economic activities, in particular infrastructure project financing, are one of the main drivers of current increases in atmospheric greenhouse gas (GHG) concentrations. Accordingly, based on the principles of shareholder, stakeholder, and institutional theories, a number of financial institutions, called the Equator Principles Financial Institutions (EPFIs), voluntarily developed the Equator Principles (EPs) as “a risk management framework for determining, assessing and managing environmental and social risk in projects” (EPs-website). In 2013, EPs were updated (EPIII) to include project-related climate change issues in project assessment. Doing so enables the EPFIs to reduce credit risks, enhance reputation, and gain legitimacy. However, despite the development of EPIII, its climate change policies are left vague, and different opinions have evolved around their likely effectiveness in helping the EPFIs to manage their climate risks and change their behavior towards climate change management. Apart from existing criticisms that the EPs fail to enforce the EPFIs’ commitment to voluntary standards, this study examines the likely effectiveness of the EPs’ mandates from a climate change perspective. This study follows two main methodological approaches: 1) primary document and policy analysis and 2) comparative legal and synthetic analysis to analyze the EPs’ climate change policies and identifying potential challenges to address climate change issues through Environmental Impact Assessment (EIA). This research analyzes the existing guidelines on climate change management and elaborates underlying principles and motivators for climate change policies to develop a set of generalized criteria for the effective incorporation of climate change issues into EIA. In light of these criteria, I then examine how EPIII include climate change in the EIA for projects proposed for bank financing. This study will analyze whether the EPs are having a positive impact on managing climate change issues and reveal to which extent the EPs confirms the principles of underlying theories and fulfills the primary motivators.

**Key words:** Equator Principles, project-financing sector, climate change, theories and motivators for climate change management, Environmental Impact Assessment.

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## List of Abbreviations

AP	Action Plan
BP	Bank Procedure
CARB	California Air Resources Board
CSR	Corporate Social Responsibility
CEQ	Council on Environmental Quality
EHS	Environment, Health, and Safety Guideline
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
EIA	Environmental Impact Assessment
EPs	Equator Principles
EPFIs	Equator Principles Financial Institutions
EPI	Equator Principles First Version
EPII	Equator Principles Second Version
EPIII	Equator Principles Third Version
GHG	Greenhouse gas
IPCC	Intergovernmental Panel on Climate Change
MDB	Multilateral Development Bank
IBRD	International Bank for Reconstruction and Development
IFC	International Finance Corporation
NCEA	Netherland Commission for Environmental Assessment
NGO	Non-governmental organization
OP	Operational Policy
UNFCCC	United Nation Framework Convention on Climate Change
WCED	World Commission on Environment and Development

# Chapter 1: Introduction

## 1.1 Context for Research

### 1.1.1 Problem Statement

Climate change is an increasingly important global issue that adversely affects economic activities and reduces project revenues (IPCC, 2014a). Investors and financial institutions are, and will continue to be, exposed to climate change downside risks, such as the expected reduction in economic growth and direct physical risks caused by severe climatic conditions (Curtis, 2009; Stern, 2006; Sullivan, 2014). On the other hand, economic activities, such as infrastructure project financing, are one of the main drivers of current increases in global temperature due to atmospheric greenhouse gas (GHG) concentrations (IPCC, 2014a). The Intergovernmental Panel on Climate Change (IPCC)<sup>1</sup> Fifth Assessment Report (AR5) (2014) concludes that climate change is unequivocal, and GHG emissions from large development activities are very likely to be the dominant cause. Infrastructure development projects are often capital-intensive and technically complex and, therefore, demand considerable levels of financial support. Consequently, financial institutions, in particular private project financiers, directly support a range of projects that have severe impacts on climate change (Egede & Lee, 2007; Wörsdörfer, 2013; Wright & Rwabizambuga, 2006).

Project financiers need to be aware that climate change could compound project-related risks across the entire investment sector and will impose additional costs if no action is taken by them. According to the principles of shareholder, stakeholder, and institutional theories, the banks are required to pro-actively develop strategies for managing credit, reputation, and legitimacy risks caused by climate change through “a clear regulatory framework on which they can adapt and base their investment decisions” (Dlugolecki & Lafeld, 2005, p. 9). As such, the Equator Principles Financial Institutions (EPFIs), who have developed the Equator Principles (EPs) as “a risk management framework, adopted

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<sup>1</sup> The Intergovernmental Panel on Climate Change (IPCC) is an international organization established in 1988 for the review and assessment of scientific, technical, and socio-economic information relevant to the understanding of climate change (IPCC-website).

<sup>2</sup> “Project finance is a risk diversification strategy used in development activities, such as power plant, extraction, and transportation projects, with massive up-front costs and long-term payouts. In such investment, one underwriting bank syndicates the loan (60-80 percent of the project cost) to other banks, spreading the risk. For the project firm, the risk is limited to the firm’s equity stake (20-40 percent of the project cost) in the project alone. The only recourse banks have,

by financial institutions, for determining, assessing and managing environmental and social risk in projects” (EPs-website), updated the EPs, EPIII, in 2013, to include project-related climate change issues in project assessment (Equator Principles, 2013b; Torrance, 2014; Wörsdörfer, 2013). In the preamble to EPIII, the EPFIs state: “[w]e recognise the importance of climate change ..., and believe negative impacts on ... the climate should be avoided where possible. If these impacts are unavoidable they should be minimised, mitigated, and/or offset” (p. 2). EPIII introduces Environmental Impact Assessment (EIA) as the principal tool by which project finance lenders are able to ensure that climate change is considered as a key aspect of the identification, assessment, and management of environmental risk in GHG-intensive projects. Doing so not only enables the EPFIs to maximize shareholders’ benefits, include stakeholders’ interests, and comply with the institutional environment but also help them to reduce credit risks, enhance reputation, and practice corporate social responsibility (CSR).

At first glance, the adoption of EPs’ climate change policies appears to be a substantial step toward climate change management within the project-financing sector. However, debate as to whether these policies are actually spurring climate change management remains. Since climate change incorporation into EIA is not a straightforward process, it is an immense challenge for the EPFIs to fully integrate climate change mitigation and adaptation into their EIA procedures (Agrawala et al., 2012; Bell et al., 2003; Byer & Yeomans, 2007; IAIA, 2013). Thus, despite the development of EPIII, its climate change policies are left vague, and different opinions have evolved around the likely effectiveness of the EPs to address climate change issues (Balch, 2012; Torrance, 2014; Papanicolaou & Campbell, 2012). Effectiveness in this context means whether the EPs help banks in addressing their climate risks and actually changes banks’ behavior towards climate change management (Macve & Chen, 2010).

Apart from existing criticisms of the EPs: the EPs fail to enforce the EPFIs’ commitment to voluntary standards and lack mandates for monitoring the EPFIs’ compliance (Hardenbrook, 2007; Wright, 2012), this study examines the likely effectiveness of the EPs’ mandates from a climate change perspective. This study contributes to filling the current gap of understanding EPIII’s climate change policies, identifying potential

challenges to address climate change issues through EIA. It analyzes the existing guidelines on climate change management through EIA (Agrawala et al., 2012), and elaborates underlying principles and motivators for climate change policies (Balch, 2012; Macve & Chen, 2010; Wright & Rwabizambuga, 2006) to develop a set of generalized criteria for effectively incorporating climate change issues into the EIA process. In light of these criteria, I then examine how EPIII requires the EPFIs to include climate change in the EIA for projects proposed for bank financing. This study will analyze whether the EPs are having a positive impact on managing climate change issues and reveal to which extent EPIII confirms the principles of shareholder, stakeholder, and institutional theories, seeks to facilitate sustainable development, and fulfills the primary objectives of credit, reputation, and legitimacy risk management.

### **1.1.2 Significance of the Problem**

Related studies widely discuss whether the EPs are effective as voluntary standards or whether more mandatory codes are required. They indeed examine the likely effectiveness of the EPs in requiring the EPFIs' compliance with their commitments and conclude that the EPFIs often fail to fully comply with the EPs' requirements (Durbin, Herz, Hunter, & Peck, 2006; Hardenbrook, 2007; Hunter, 2007; Lawrence & Thomas, 2004; Marco, 2011; Mathiason, 2010; Wright, 2009). Several studies make suggestions for improving the EPs reporting framework such as examining the procedural policies implemented by the EPFIs to meet the EPs' standards and explore whether there have been any improvements in their investment portfolio to reflect the EPs' requirements.

However, regarding EPIII's climate change policies and their implementation, scholars have not dealt with underlying theories of the EPFIs' behaviors and their motivators to develop climate change policies, and have not been concerned with the question what can be learned from the development of these policies for other efforts of voluntary governance mechanism seeking to address climate change issues. In addition, there is little document and policy literature analyzing the EPs through the lens of climate change management. Therefore, for the first time since their development, this study examines the EPIII' climate change policies in order to assess the likely effectiveness of these policies and identify their implementation challenges by examining whether the EIA

process required by EPIII can fulfill the principles of underlying theories and satisfy the EPFIs' primary objectives. This thesis positions its arguments as part of the ongoing debate concerning the implementation of the EPs, but particularly from a climate change perspective.

Understanding the challenges of the EPs' climate change policy is important for a number of reasons. First, this study examines underlying theories shaping banks' behavior towards sustainable development in order to understand why the EPFIs take on voluntary commitment. It also analyzes motivators that encourage the EPFIs to address climate change issues in order to identify what objectives supposed to be achieved by EPIII's climate change policies. Doing so helps other efforts of environmental voluntary governance mechanism and soft law to regulate banking conduct towards climate change management. Second, the EPFIs "cover over 70 percent of international project finance debt in emerging markets" (EPs-website), thus, their positive or negative environmental behaviors can significantly influence global climate change issues. Third, this study enables the 81 EPFIs to gain a better internal understanding of their environmental performances and to close potential gaps in their applicable environmental policies. It also supports other private project financiers to manage their reputational and credit risks caused by climate change and empower them towards facilitating sustainable development. Fourth, this research provides information to stakeholders that can be affected by the EPFIs' lending activities, particularly to non-governmental organizations (NGOs) monitoring the banks' performances to highlight better environmental practices. Incorporating climate change into the EIA process has potential benefits to enhancing the environmental and economic performance of the EPFIs. However, if the EPs do not adequately apply the key criteria to their EIA process and do not overcome challenges of implementing climate change policies, these benefits can become difficult to achieve.

## **1.2 Research Contribution**

This research study is intended to make a major contribution to:

**Identifying the likely effectiveness of the EPs in managing climate change issues within the project-financing sector.**

To do so, the following four-step contribution is undertaken. Each contribution is associated with sub-question summarized in Section 1.3 and sub-study canvassed in the Method Chapter.

**1) Descriptive contribution:** Expand the literature on large infrastructure project-associated climate change impacts and provide context for the development and operation of the EPs within the project-financing sector by

- Emphasizing the critical role of project financing in exacerbating global climate change;
- Mapping the development of the EPs and their reliance on the World Bank and International Finance Corporation (IFC), and
- Elaborating upon the hierarchy of policies within the project-financing sector.

**2) Theoretical contribution:** Analyze the underlying theories shaping the EPFI's behaviors to voluntarily create the EPs and to incorporate climate change issues into EIA by

- Explaining shareholder, stakeholder, and institutional theories that shape banks' behaviors towards sustainable development;
- Identifying the EPFI's motivators for managing climate change issues;
- Analyzing the EPFI's response of including climate change issues into EIA to different pressures;
- Explaining potential challenges for climate change management to fulfill the underlying principles and motivators.

**3) Analytical contribution:** Create a new set of generalized criteria for incorporating climate change issues into the EIA process by

- Analyzing the existing guidelines on incorporating climate change into EIA, and
- Considering underlying theories and the Banks' motivators.

**4) Synthetic Contribution:** Assess EPIII's climate change policies with recommendations by

- Applying the developed criteria to the EIA process suggested by EPIII,
- Identifying challenges and difficulties for implementing these policies,
- Providing a baseline for a revision of EPIII,
- Paving the way towards EP IV in order to enhance the likely effectiveness of EPs in addressing climate change issues, and
- Contributing to the new governance literature by assessing voluntary environmental initiatives and soft law in climate change management.

### 1.3 Research Questions and Objectives

With regard to the upward trend in climate change and the key role of the EPFIs in project financing, the research questions motivating this thesis are as follows:

**Main-question:**

*What are the EPs' implementation challenges for incorporating climate change into their EIA process to address project-associated climate change issues?*

Incorporating climate change issues into EIA is one of the most common approaches for addressing climate change impacts, although it is relatively challenging. In order to address the main question, it is necessary to answer the following four sub-questions.

**Sub-question 1:**

**Why climate change policies are essential within the project-financing sector?**

Addressing this question highlights the importance of climate change policies, particularly for private investment activities. It allows me to track the evolution of the EPs and clarify the hierarchy of policies in the project-financing sector by revealing the linkage between the World Bank, IFC, and EPs.

**Sub-question 2:**

*How were the EPs developed and why do they include climate change in their EIA process?*

This question enables me to examine the underlying theories based on which the EPFIs voluntarily develop the EPs that can potentially constrain their action and limit



profitability. It also identifies the EPFIs' primary goal of credit, reputation, and legitimacy risks management that motivate the banks to include climate change into the EIA process. This question not only sketches the theoretical toolkit to develop the criteria required to incorporate climate change issues into EIA, but also can assess whether the EPs can ultimately fulfill underlying principles and objectives they were meant to serve.

**Sub-question 3:**

*What are key criteria for incorporating climate change into EIA?*

This question provides me with a new range of criteria that are essential for an adequate incorporation of climate change issues into EIA system. These criteria should be aligned with the principles and motivators identified in Chapter 4. Chapter 5 develops these generalized criteria that should be considered in EIA practices.

**Sub-question 4:**

*How do the EPs incorporate climate change issues into EIA?*

Following the identification of criteria in Chapter 5, Chapter 6 applies the developed criteria to EPIII and examines its climate change policies in light of these criteria. This examination helps to identify the EP challenges and understand to what extent the EPs meet the primary objectives and principles stated in Chapter 4.

## **1.4 Conceptual Framework**

The conceptual framework of this study reveals the theoretical underpinnings of this research, explains the methodological path of the study, illustrates the research contribution, and shows the connection of each step to the research questions. Figure 1, below, depicts the multi-method analysis of this study including primary document analysis, comparative legal analysis, and synthetic analysis of doctrinal resources and extrinsic evidence such as domestic and international policies and the EPs articles.

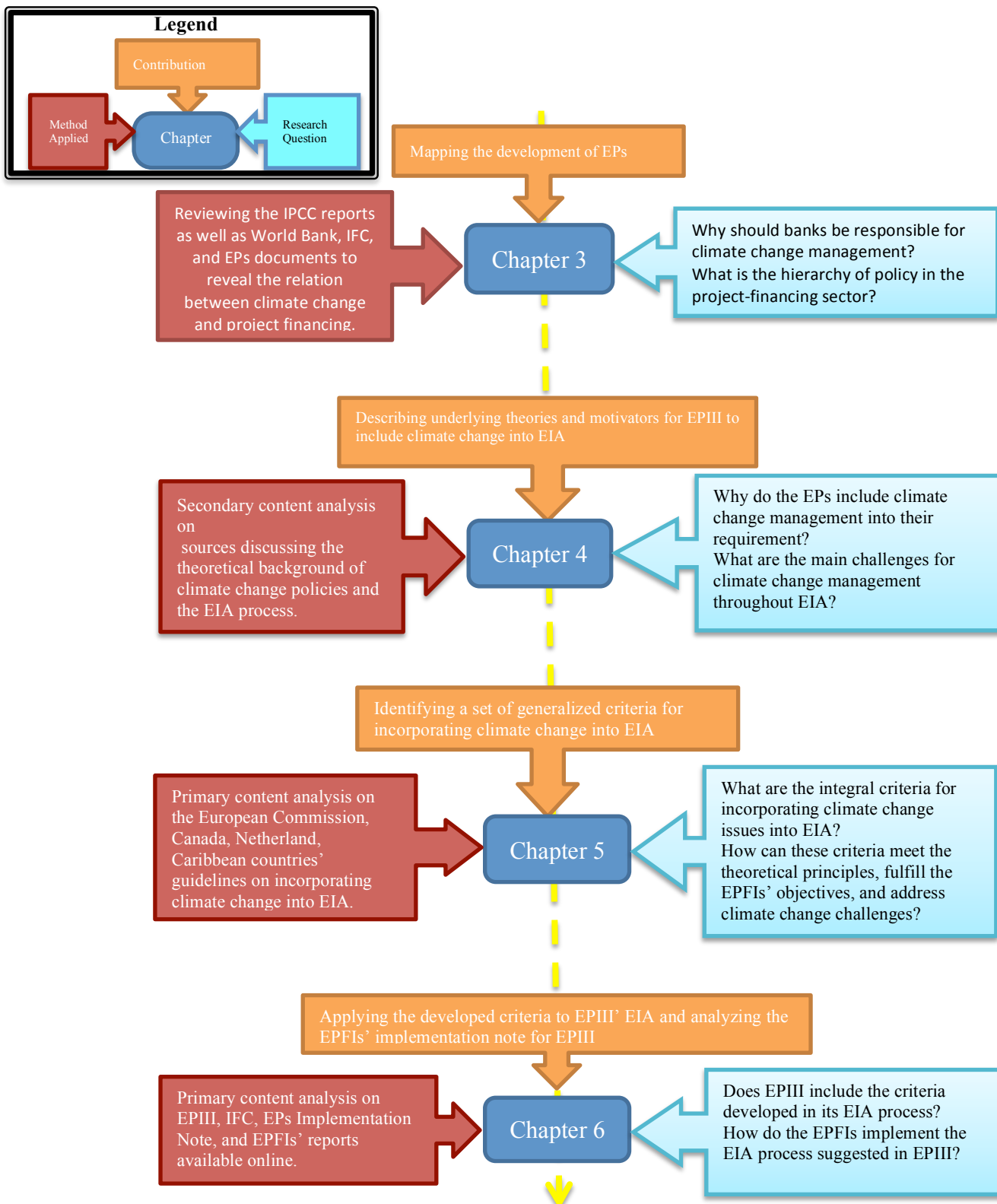


Figure 1: Conceptual framework of the study

## Chapter 2: Thesis Organization and Methodology

### 2.1 Introduction

Despite extensive research on project financing and climate change management, debate continues on whether environmental initiatives such as the Equator Principles (EPs) can address climate change within the project-financing sector (Torrance, 2014; Papanicolaou & Campbell, 2012; Sohn & Miller, 2011). The practice of climate change management during project financing reveals that the Equator Principles Financial Institutions (EPFIs) are in a period of experimentation in which research on how to incorporate climate change into project EIA could be useful. Moreover, the EPFIs have the power to influence infrastructure development projects in a way that has great potential for positive contributions to sustainable development (Gutner, 2002; Stern, 2006). Therefore, filling this gap in the research is relevant for recommending future policy strategies for environmental initiatives concerning climate change management and sustainable development.

### 2.2 Study Paradigm

The paradigm of this thesis is the *constructivist paradigm*, whereby meanings are constructed through interactions with others and the world (Creswell, 2014). The constructive paradigm of this research asserts that “social phenomenon [like the EPs] and their meaning are produced by social actors [the EPFIs and stakeholders] through their social interaction and that they are in a constant state of negotiation and revision” (Bryman & Teevan, 2005, p. 13). This study has an *inductive view* and “involves drawing generalizable inference out of observation” (Bryman & Teevan, 2005, p. 7). Through this inductive approach, I will examine a general gathering of information and then evaluate my findings to understand challenges that the EPFIs may face while applying EIA. In this inductive approach, theory regarding the likely effectiveness of the EPs is the outcome of the research. As a result of the inductive approach and the constructive position, this study follows a “qualitative approach” to examine existing policies in order to determine and analyze the policy factors that are important to the likely effectiveness of environmental initiatives seeking to incorporate climate change into the EIA process (Creswell, 2009; Lindlof, 2002).

This thesis will follow two main methodological approaches: 1) primary document and policy analysis (principally Chapters 3 and 6), and 2) comparative legal and synthetic analysis (Chapter 6). Through the mentioned approaches, this study will touch upon empirical, theoretical, analytical, normative, and synthetic inquiry. It is empirical through its literature review and examining primary documents from the EPs and EPFIs. It is theoretical in its examination of underlying theories that shape banks behaviors towards sustainable development and in its investigation of motivators for the EPFIs to manage climate change issues. It is analytical in its development of criteria and its assessment of the EPs from a climate change perspective. It is normative in that the results make prescriptive claims on how the EPs and other environmental initiatives should incorporate climate change issues into EIA, and what implementation challenges the EPFIs face in climate change management. It is synthetic through its policy-oriented research seeking to discuss the likely effectiveness of the EPs' policies in addressing climate change issues within the project-financing sector. While the data cannot be replicated, the conceptual and empirical conclusions about elements required for climate change management can be used to guide and inform future policy making.

The qualitative approach will assist in the policy analysis, in which a four-step research method address the main question: *What are the EPs' implementation challenges in incorporating climate change into their EIA process to address project-associated climate change issues?* The multi-method process of this study intended to respond to the four sub-questions through the following sub-studies.

### 2.3 Sub-study 1

*Why climate change policies are essential within the project-financing sector?*

Chapter 3 is the preliminary part of this study and provides context on the emergence of the EPs' climate change policies, which are an integral element of this study, and discusses the events leading up to the development of EPIII. The method applied in this chapter is primary and secondary content analysis that will provide a brief description of the interaction between financing activities and climate change as well as the hierarchy of

policies in the project-financing sector through the literature. This Chapter also discusses some of the events that occurred within the project-financing sector leading to the development of the EPs. This examination aims to:

- Highlight climate change impacts on economic development and reveal the importance of project financing in exacerbating climate change through the IPCC reports;
- Examine the World Bank- and IFC-related environmental policies, because there is a strong functional linkage between these policies and the EPs.
- Explain the challenges of the World Bank and IFC's policies in addressing environmental issues in the private project-financing sector;
- Track the voluntary development of the EPs based on the data provided by the EPs' documents and core literature discussing the EPs.
- Reveal the influence of the World Bank's policies on the IFC, and the linkage between the EPs, IFC's Performance Standards, and the World Bank's EHS Guidelines through primary documents from the EPs along with secondary sources from experts in the realm of the EPs; and
- Describe the emergence of EIA in EPIII for addressing project-associated climate change issues.

## 2.4 Sub-study 2

### *How were the EPs developed and why do they include climate change in their EIA process?*

Chapter 4 provides a theoretical context for the development of the EPs and final goals supposed to be achieved by the EPIII' climate change policies; the primary research method is doctrinal. This theoretical toolkit then will be used to create a set of criteria, in Chapter 5, that are integral for incorporating climate change into EIA. Chapter 4 will not cover the extensive literature on shareholder, stakeholder, and institutional theories but, rather, to provide a brief on the EPs developments from the theoretical perspective that is most relevant to this thesis. This, in turn, leads to a discussion of credit, reputational, and legitimacy (CSR) risks motivating the EPFIs to incorporate climate change issue into their decision-making. Finally, Chapter 4 reviews briefly the process and challenges of Environmental Impact Assessment (EIA), which is the EPFIs' response of acquiescence

to external pressures. Chapter 4 is intended to address following questions:

- What theories shape banks' behaviors towards sustainable development?
- What are the motivators for the EPFIs' to manage climate change issues?
- What is the EPFIs' response of acquiescence for climate change management?
- What are EIA's approaches to fulfill underlying theories and satisfy motivators?
- What challenges do the EIA process face for climate change management?

To successfully address these questions, this study will:

- Describe the underlying theory for integrating sustainable decision-making into investment activities through the literature by experts in shareholder, stakeholder, institutional theories, for instance, Donaldson & Preston, 1995; Freeman, Wicks, & Parmar, 2004; Friedman, 1970; and Oliver, 1991; and
- Analyze the EPFIs' motivators for considering project-associated climate change impacts by reviewing primary content published by the EPs and the EPFIs, as well as secondary sources concerning voluntary environmental initiatives; and
- Examine EIA as the EPFIs' positive response to financial, social, and institutional pressures and explain difficulties of addressing climate change impacts through the EIA process.

## 2.5 Sub-study 3

### *What are key criteria for incorporating climate change into EIA?*

Chapter 5 is a major step in this study and seeks to create a set of generalized criteria for the incorporation of climate change issues into the EIA process through policy analysis and theoretical toolkit developed in Chapter 4. These criteria aim to balance the level of prescription, so as to be generic enough for application, but with enough specificity to avoid being misinterpreted. They also seek to provide a linkage between the steps of EIA and underlying theories and motivators. The methodology here includes a review of a set of best practice policies incorporating climate change into EIA to show that how climate change issues should be included in project assessment. Doctrinal sources are also considered to show that the challenges of climate change management, such as GHG cumulative impacts and future climatic uncertainty can be addressed throughout the EIA process. The data will be analyzed inductively, first being discovered through existing

best practice policies and second under general themes (Creswell, 2014).

One of the ways of improving the EPs' climate change policies is to identify best practice policies that seem to work successfully somewhere else. This approach called best practice research "is based on the idea that instead of formulating an abstract ideal policy, I should develop what has been or is being implemented and is proven to work somewhere else" (Vesely, 2011, p. 1). In so doing, I use four key attributes to identify best practice policies summarized in Appendix 1:

- 1) Since the EPFIs are lending in both developed and developing countries, the best practice policies should be applicable in different regions. Thus, I select the best practice policies from developing countries, developed countries, and international organizations in order to gain extensive data on how climate change is incorporated into EIA.
- 2) There are several developed and developing countries as well as regional organizations have already examined the possibility of and declared their intentions of incorporating climate change issues into EIA modalities. However, best practice policies in this study are those policies that provide well-regulated guidelines on integrating climate change issues into the EIA process (Agrawala et al., 2012).
- 3) The adequate incorporation of climate change issues into EIA need both mitigation and adaptation strategies. Thus, I identify the best practice policies that consider a comprehensive approach of mitigation and adaptation measures (IPCC, 2014a).
- 4) The identified best practice policies in this study should have been through ongoing policy reviews.

Following the identification of best practice policies, I analyze them under general themes to develop relevant criteria for incorporating climate change issues into EIA. Figure 2, below, describes the overall process used to create the 13 criteria for assessing project-associated climate change impacts throughout the EIA process. Accordingly, in each step of EIA (analysis step in yellow boxes), summarized in Section 4.3.3, I will ask two main questions (questions investigated in white boxes) that should be addressed from

mitigation (mitigation information in blue boxes) and adaptation (adaptation information in green boxes) perspectives.

- First question aims to identify which climate change impacts should be identified, assessed, and managed in the EIA step under study; and
- Second question seeks to examine which underlying principles and motivators will be fulfilled through the EIA step.

Consequently, the above-mentioned two-step analysis helps me develop the 13 criteria that are integral to the likely effectiveness of policies that aim to incorporate climate change issues into EIA. It is worth to note that although each criterion is capable of fulfilling several principles and satisfying various motivators, I try to link each criterion to the principles and motivators that they have the strongest relationship with.



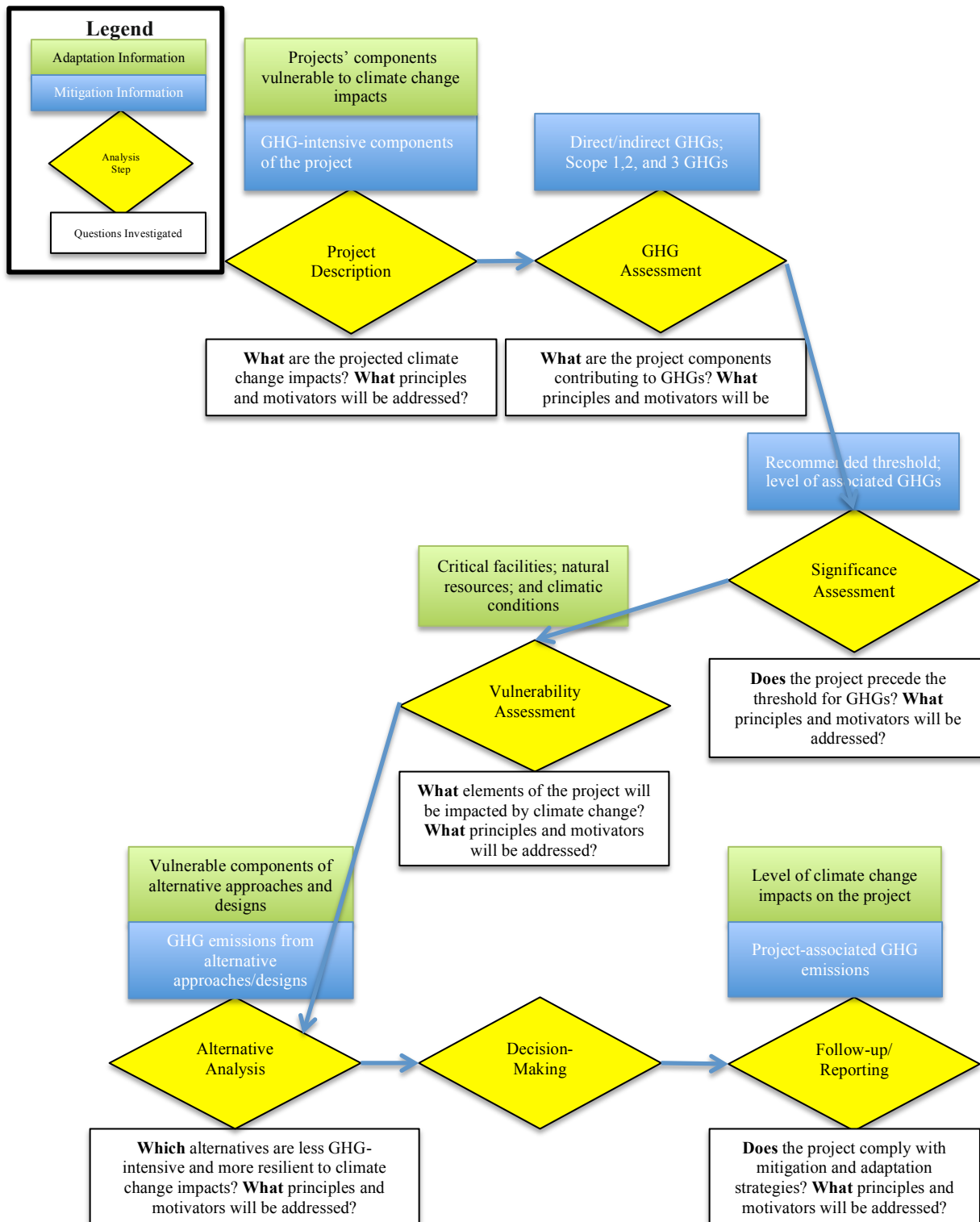


Figure 2: Detailed climate change impact assessment

## 2.6 Sub-study 4

### *How do the EPs incorporate climate change into EIA?*

Chapter 6 applies the criteria developed in Chapter 5 to the EPs' EIA process. This Chapter includes a policy analysis of the actual wording of the EPs. It aims to examine potential challenges that the EPFIs may face in project assessment, to provide a baseline for a revision of EPIII in order to enhance the likely effectiveness of EPs in addressing climate change issues. This policy analysis also contributes to the new governance literature by assessing voluntary environmental initiatives and soft law in climate change management. To do so, it will

- Evaluate the extent to which EPIII, Equator Principles Implementation Note, IFC's Performance Standards, IFC's Guidance Note, and IFC's Procedure for Environmental and Social Review of Project consider the 13 criteria;
- Identify difficulties that the EPFIs may face when considering project-associated GHG emissions (e.g., cumulative impact of GHGs on climate change) and climate change impacts on proposed projects (e.g., future climatic uncertainty affecting investment); and
- Determine whether EPIII's climate change policies can fulfill the requirements of stakeholder, stakeholder, and institutional theories, and satisfy primary motivators of credit, reputation, and legitimacy risk management.

## 2.7 Discussion

Chapter 7 discusses some of the general observations that can be made based on findings of comparative legal analysis and policy analysis. As a first point, Chapter 7 concludes that the results of this study provide support for the proposition that the EPFIs seek to manage credit and reputational risks and enhance their legitimacy through the incorporation of climate change issues into EIA. Principles of shareholder, stakeholder, and institutional theories also emphasize on these motivators for managing climate change issues within the project-financing sector. As a result, there can be little doubt that the incorporation of climate change issues into EIA will lead towards fulfilling the principles of shareholder, stakeholder, and institutional theories, as well as satisfying the motivators of credit, reputation, and legitimacy risks management.

However, this conclusion is changed by the finding that the EIA process suggested in EPIII primarily seeks to mitigate climate change issues, and the EPFIs are using them for enhancing their reputation. This is not necessarily inconsistent with EIA to the extent that reputational risk management is a primary motivator for climate change management. However, effective implementation of EIA also requires equal attention be given to climate change adaptation and transparency in decision-making procedures and this study finds the EPIII's EIA process inadequately considers climate change impacts on projects and partially disclose the result of project assessment. As a result, this thesis concludes that there is clearly room to improve the likely effectiveness of EPIII's climate change policies, particularly in the areas of climate change adaptation and decision-making disclosure. According to the finding of Chapter 5 and 6, this study then provides a set of amendments to the screening, scoping, decision-making, and monitoring stages and reasons for these changes that EPIII should adopt to effectively manage climate change issues throughout EIA. Moreover, further study is needed study to enhance the credibility of developed criteria and analyze the EPFIs' procedural mechanisms for implementing EPIII's climate change policies to see if the EPFIs are aware of these challenges as they move forwards in their compliance with EPIII's climate change policies.

## **2.8 Limitations of Study**

There are a number of research limitations specific to this study; however, some steps will be taken to decrease the impact that they will have on the study. Available research and access to accurate information are the two main categories of limitations that need to be highlighted and addressed.

### **2.8.1 Available Research**

Virtually most of the academic research that has been done on the EP often lingers on why the EPs are created and why the EPFIs adopt them (e.g., Amalric, 2005; Wright, 2006; Lawrence, 2004). Additionally, since the EPs have recently considered climate change as a provision among their principles, they have a short history in the context of climate change management. It has been almost two years since the first statement about climate change management and GHG considerations have mentioned in EPIII. This relative novelty has resulted in a significant lag in both academic research and the

collection of data. Moreover, managing climate change issues throughout EIA are considered to be an indecisive work and most of the related studies do not explicitly provide a determined approach to incorporate climate change mitigation and adaptation into the EIA process. Therefore, this study with the aim of identifying EPs' implementation challenges towards climate change management will face the lack of sufficient and adequate literature.

### 2.8.2 Access

As with many research projects, access to the primary documentations of the EPFIs and administrators in the EPs could be a possible limitation. Since the accurate information could affect banks' reputations among other competitors, they might be unwilling and unprepared to participate in the study (I contacted the EPs secretaries and asked them about the EPs' Working Group on Climate Change but they did not provide me with adequate information). Decision makers in the EPs (i.e., Working Group on Climate Change) may refuse to share their precise data about the real incentive beyond the implementation of the EP as it may prove EP inadequacy in climate change management. Moreover, obtaining data on the actual compliance of the EPFIs with the EPs and their practices of climate change management is also difficult because there is no trustworthy collection system in place that is specific to gather related data and publicize them online.

Given the above-mentioned limitations, appropriate procedures will prevent biases in the research and highlight the importance of this study. Since this project will be among initial works that examine the EPs from climate change perspective, these limitations may likely have meaningful impacts on it. However, appropriate methodologies sketched above in conjunction with the recommendations of project's advisor will draw up the research.

# Chapter 3: Climate Change and the Project-Financing Sector

## 3.1 Introduction

Climate change, a detrimental environmental risk “rais[ing] the most difficult issues of economic disparity, political power, and social justice” (World Bank, 2008, p. 2), is exacerbated during infrastructure development activities (IPCC, 2014b, p. 18). Development activities are often associated with climate change impacts for two reasons. First, they usually invest in GHG-intensive industries (e.g., energy plant and transportation infrastructure) causing a high level of emissions. Secondly, these projects are often large scale with substantial environmental footprints, and thereby affect the local environment. Further, infrastructure development projects are technically complex and capital intensive, thus they attract a variety of financial institutions to invest in such projects. Therefore, decision making regarding the investment in development projects will have significant environmental consequences (Wright & Rwabizambuga, 2006), and, thus financial institutions are required to consider associated climate change impacts during their investment activities.

Chapter 3 seeks to reveal the relation between economic activities and climate change issues, and to map the development of the Equator Principles (EPs) through the literature on climate change management strategies within the project finance sector. In so doing, Section 2 highlights the upward trend in global warming and discusses the critical role of financial institutions in bankrolling GHG-intensive activities. Section 3, then, focuses on the World Bank and examines its environmental policies. It also explains the shift in project financing towards private investments as well as the inadequate performance of the World Bank in managing environmental issues in developing countries. Section 4 discusses the International Finance Institution (IFC) mandated by the World Bank, examines the emergence of private project financiers, and provides contexts for the development of the EPs. Finally, Section 5 demonstrates the evolutionary nature of the EPs, the EPs’ reliance on the World Bank and IFC, and EPIII’s policies of climate change management.

## 3.2 Climate Change

Climate change is an increasingly important global issue that reveals the linkage between anthropogenic GHG emissions and the average temperature of the Earth. The United Nation Framework Convention on Climate Change (UNFCCC) Article 1 (2.) (1992) defines climate change as “a change of climate that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that is in addition to natural climate variability observed over comparable time periods”. IPCC Synthesis Report for Policymakers also highlights the role of human activities and states that “[h]uman influence on the climate system is clear, and recent anthropogenic emissions of greenhouse gases are the highest in history” (2014b, p. 1). Accordingly, human interference with the climate system has been a dominant cause of climate change and imposes risks on all components of the climate system (IPCC, 2014a). “It is extremely likely that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in greenhouse gas concentrations and other anthropogenic forcings together” (IPCC, 2014b, p. 5). Indeed, GHGs have increased since the pre-industrial age and their effects are likely to have been a reason for the observed warming since the mid-20th century (IPCC, 2014b, p. 4).

A few key concerns regarding GHG emissions trends and projections are:

- “Total anthropogenic GHG emissions have risen more rapidly from 2000 to 2010 than in the previous three decades, and were the highest in human history from 2000 to 2010 and reached 49 GtCO<sub>2</sub>eq / yr in 2010. From 2000 to 2010, GHG emissions grew on average by 1.0 GtCO<sub>2</sub>eq / yr compared to 0.4 GtCO<sub>2</sub>eq / yr over the entire period from 1970 to 2000” (IPCC, 2014a, p. 42).
- “CO<sub>2</sub> emissions from fossil fuel combustion and industrial processes contributed about 78% to the total GHG emissions increase from 1970 to 2010. Fossil fuel-related CO<sub>2</sub> emissions reached 32 GtCO<sub>2</sub> / yr in 2010 and grew further by about 3% between 2010 and 2011 and by about 1.5% between 2011 and 2012. Of the 49 GtCO<sub>2</sub>eq / yr in total anthropogenic GHG emissions in 2010, CO<sub>2</sub> remains the major GHG accounting for 76% of total anthropogenic GHG emissions” (IPCC, 2014a, p. 45), (Figure 3).

- “Over the last four decades total cumulative CO<sub>2</sub> emissions have increased by a factor of 2 from about 910 GtCO<sub>2</sub> for the period 1750 – 1970 to about 2000 GtCO<sub>2</sub> for 1750 – 2010. In 1970, the cumulative CO<sub>2</sub> emissions from fossil fuel combustion, cement production and flaring since 1750 was around 420 GtCO<sub>2</sub>; in 2010 that cumulative total had tripled to 1300 GtCO<sub>2</sub>. About half of cumulative anthropogenic CO<sub>2</sub> emissions between 1750 and 2010 have occurred in the last 40 years” (IPCC, 2014a, p. 7), (Figure 4).

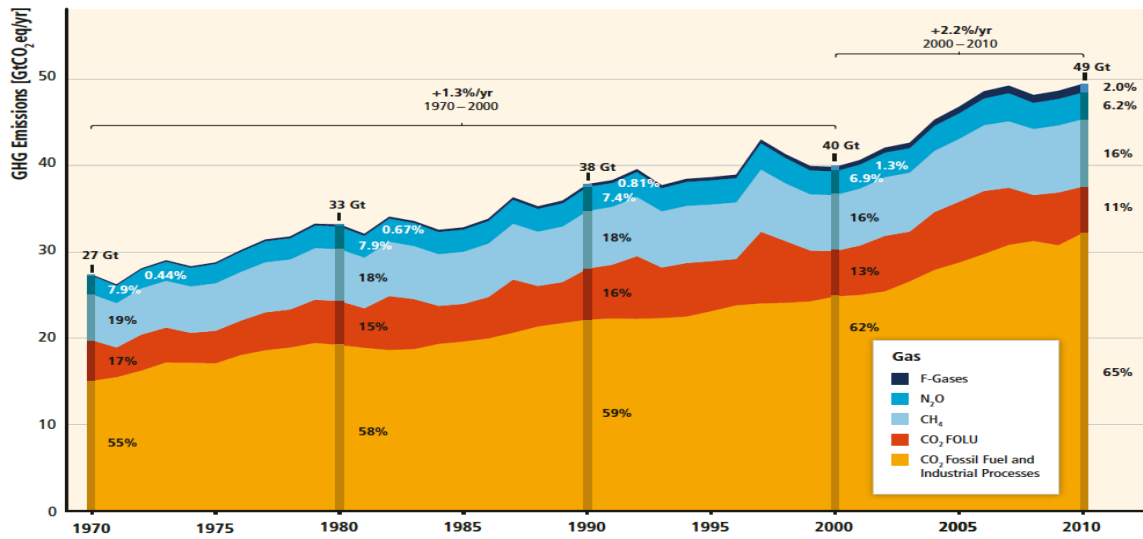


Figure 3: Total annual anthropogenic GHG emissions (GtCO<sub>2</sub>eq/yr) by groups of gases 1970 – 2010: CO<sub>2</sub> from fossil fuel combustion and industrial processes; CO<sub>2</sub> from Forestry and Other Land Use (FOLU); methane (CH<sub>4</sub>); nitrous oxide (N<sub>2</sub>O); fluorinated gases covered under the Kyoto Protocol (F-gases) (IPCC, 2014a).

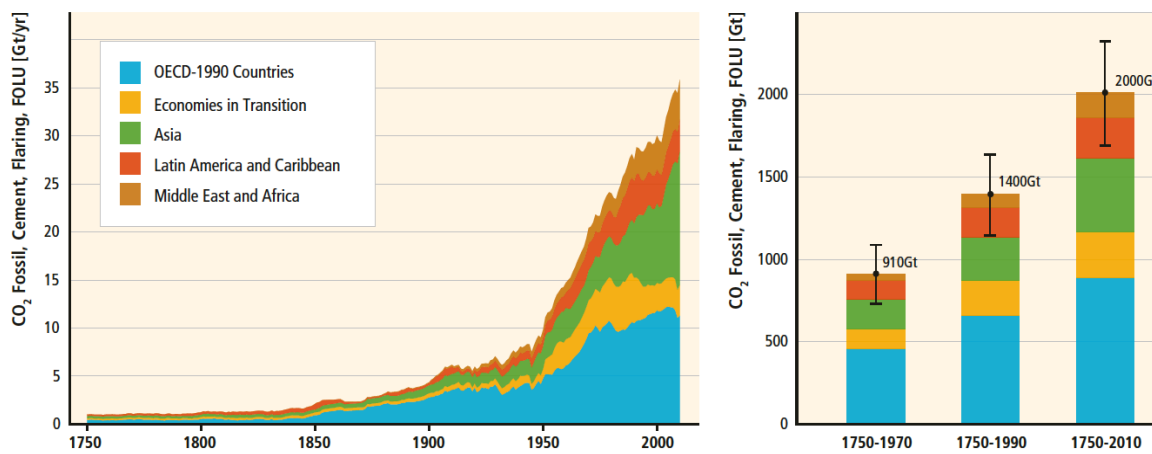


Figure 4: Historical anthropogenic CO<sub>2</sub> emissions in five major world regions. The left panel shows the sum of all CO<sub>2</sub> sources from 1750 – 2010. The right panels report regional contributions to cumulative CO<sub>2</sub> emissions over selected time periods (IPCC, 2014a).

The upward trend in emitting anthropogenic GHGs not only illustrates the impacts of human activities on climate change, but also warns of climate change impacts on natural systems and human life. For example, “surface temperature is projected to rise over the 21st century under all assessed emission scenarios. It is very likely that heat waves will occur more often and last longer, and that extreme precipitation events will become more intense and frequent in many regions” (IPCC, 2014b, p. 10). These impacts are altering hydrological systems and affecting water resources. “Many terrestrial, freshwater, and marine species have shifted their geographic ranges, seasonal activities, migration patterns, abundances, and species interactions in response to ongoing climate change” (IPCC, 2014b, p. 6).

An efficient reaction to climate change should simultaneously consider both mitigation and adaptation strategies. According to the World Bank (2008), “[m]ost of the warming trend observed since the mid-20th century is very likely due to an increase in anthropogenic GHG concentrations, particularly of CO<sub>2</sub> caused by activities such as fossil fuel use and land use changes. While these activities have already likely committed the Earth to a level of warming within 2 degrees Celsius, the challenge remains to curtail global greenhouse gas emissions so that it will be feasible to “manage the unavoidable” without incurring costs and impacts of a catastrophic magnitude” (p. 2). A delay in mitigation of and adaptation to climate change risks will hinder the lower atmospheric GHG concentrations and increase the risk of severe impacts.

“[A]nomic and population growth continue to be the most important drivers of increases in CO<sub>2</sub> emissions from fossil fuel combustion. The contribution of population growth between 2000 and 2010 remained roughly identical to the previous three decades, while the contribution of economic growth has risen sharply” . Worldwide population increased by 86% between 1970 and 2010, from 3.7 to 6.9 billion. Over the same period, income as measured through production and/ or consumption per capita has grown by a factor of about two. With rising population and economic output, emissions of CO<sub>2</sub> from fossil fuel combustion have risen as well. Over the last decade, the importance of economic growth as a driver of global CO<sub>2</sub> emissions has risen sharply while population growth has remained roughly steady” (Figure 5) (IPCC, 2014a, p. 48).



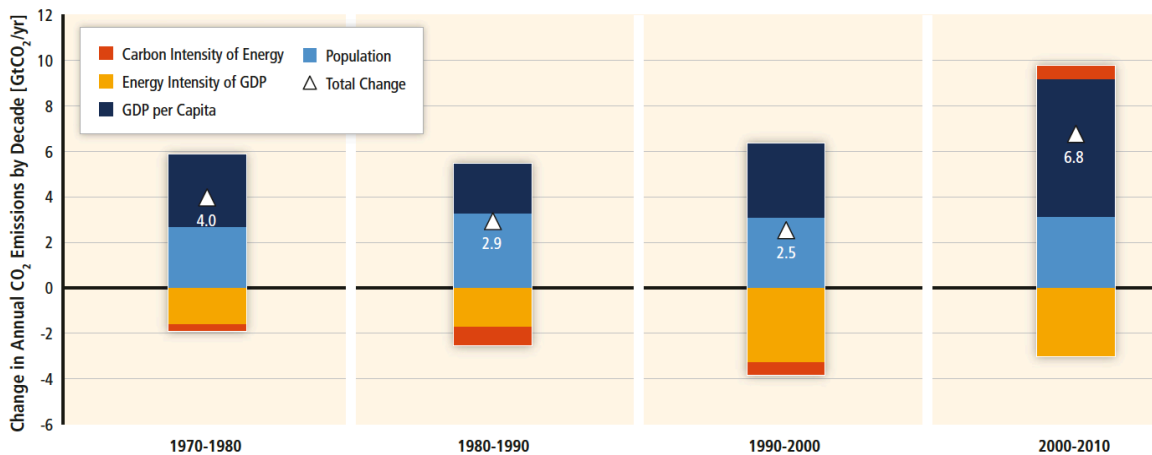


Figure 5: Decomposition of the change in total annual CO<sub>2</sub> emissions from fossil fuel combustion by decade and four driving factors: population, income (GDP) per capita, energy intensity of GDP and carbon intensity of energy. The bar segments show the changes associated with each factor alone, holding the respective other factors constant (IPCC, 2014a).

Economic growth leads to increases in income correlated with higher energy usage, and it continues to be the most important driver of GHG emissions from fossil fuel combustion. As such, infrastructure development activities as an outcome of economic growth are one of the main sources of GHG emissions with significant long-term impacts on the global climate system (IPCC, 2007; World Bank, 1998). The momentum in global economic growth spreads into the developing countries and facilitates investment in infrastructure projects (Zhu, 2011). The involvement of developing countries in economic growth has led to further increases in GHG emissions even within emerging economies (see Figure 4). Therefore, the relation between economic development and climate change exacerbation reveals the importance of sustainable development that seems now to be globally accepted (Baranes, 2009; Cohen et al., 1998; Shihata, 1992).

The World Commission on Environment and Development (WCED) clarifies the relationship between economic development and the environmental protection and highlights the importance of sustainable development. The Commission defines sustainable development as a progress “that meets the needs of the present without compromising the ability of future generations to meet their own needs” (1987, p. 45). Sustainable development provides a basis for considering climate change issues and establishing related regulations. Restricting the impacts of climate change is integral to

equally achieve economic, social, and environmental development. Responses to address climate change, both mitigation and adaptation, are linked to sustainable development. The Fourth Assessment Report of the IPCC (2014) emphasizes the dual relationship between climate change and sustainable development and states “substantial reductions in emissions would require large changes in investment patterns” (p. 26).

As mentioned in the above discussion, the expansion of infrastructure development projects through globalization exacerbates climate change and imposes long-term adverse impacts on current and future generations (IPCC, 2014a). Large-scale infrastructure development projects are extremely capital-intensive and need substantial fiscal resources from public and private financial institutions (Benoit, 1996; Wörsdörfer, 2013). Given the increasing environmental degradation caused by infrastructure development activities, only a few countries pursue economic growth while decreasing their overall GHG emissions over longer periods of time. Countries may ignore the environmental impacts of infrastructure development projects based on the rationale that climate change is a global problem and an individual project is unlikely to have any measurable impact on global climate change (CEQ, 1997). Since GHG emissions mix globally in the atmosphere and emissions by any agent affect other agents, anthropogenic climate change is considered to be a global common problem and thus countries may not pay enough attention to their participation in climate change exacerbation (Parr, 1999).

In these cases, Multilateral Development Banks (MDBs), and private project financiers are particular mechanisms to provide financial supports through project financing<sup>2</sup> (Wright & Rwabizambuga, 2006). Project finance is a method of “financing infrastructure projects, in which the borrower is a company formed for the creation of the infrastructure facility and the lender is repaid primarily from the cash flow and value of the facility itself” (Marco, 2011, p. 451). As such, they play a critical role in conducting GHG-intensive projects and are considered to be a potential target for pushing economic

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<sup>2</sup> “Project finance is a risk diversification strategy used in development activities, such as power plant, extraction, and transportation projects, with massive up-front costs and long-term payouts. In such investment, one underwriting bank syndicates the loan (60-80 percent of the project cost) to other banks, spreading the risk. For the project firm, the risk is limited to the firm’s equity stake (20-40 percent of the project cost) in the project alone. The only recourse banks have, should the project sour, is the project itself” (Scheppers, 2011, p. 90).

growth towards a sustainable structure and redesigning the investment sector (Jeucken, 2001).

For example, the costs associated “the Alpha coal mine in Australia’s Galilee Basin are estimated at US\$4 billion, while the construction costs for the associated rail and port infrastructure to transport the coal are expected to top US\$6 billion” (Buckley & Sanzillo, 2013, p. 5). As such, banks have a crucial role in supporting these projects by mobilizing financial resources for the coal sector. “Through the allocation of financial resources, banks are therefore in a unique position to either help or hurt our climate” (Schücking, 2013, p. 8). These banks are among the primary sources of project-financing investments in the globalized world economy. Therefore, reducing GHG emissions and addressing climate change mitigation would be enhanced by imposing environmental responsibilities (i.e. climate change mitigation and adaptation) on the bank, and consequently, they have received increasing pressure to be more environmentally friendly during their investment activities (Biermann et al., 2009; Shihata, 1992). Among all financial institutions, the World Bank, which is the leading source of international development funding (Rosen, 2000), is best positioned to impose environmental and social responsibility on multilateral development banks and other international financial institutions (Hunter, 2007).

Therefore, the role of financial organizations in facilitating sustainable development has been broadly recognized by all institutions involved in the development process, and “sustainable development has been integrated into the operations and governing mandate of many prominent international organizations” (Drexhage & Murphy, 2010, p. 10). The WCED noted that the development banks should take a leading role in addressing environmental issues while supporting infrastructure development projects (Brundtland, 1987). In particular, it focuses on the importance of the World Bank that should update its lending programs to consider environmental issues.

### **3.3 The World Bank**

The World Bank is an MDB that provides financial and technical assistance for countries through low-interest loans (World Bank-website). The International Bank for

Reconstruction and Development (IBRD) Articles of Agreement (1989) identifies the World Bank's main objectives as "to assist in the reconstruction and development of territories of members by facilitating the investment of capital for productive purposes" and "to promote the long-range balanced growth of international trade and the maintenance of equilibrium in balances of payments by encouraging international investment" (p. 3). The World Bank intends largely to expedite economic growth by providing long-term loans to finance infrastructure development projects (Benoit, 1996).

Following the globally accepted relationship between development and the environment, the World Bank has been motivated to consider some aspects of environmental concerns during its investment activities (Shihata, 1992). In response to the dilemma revolved around pursuing sustainable development, the World Bank provides guidelines on how to manage environmental issues in any proposed project (World Bank, 2008). The World Bank efforts to integrate environmental considerations into development activities significantly improved through its issuing of Operation Policy (OP) 4.01 and Bank Procedures (BP) 4.01 on Environmental Impact Assessment (EIA) (World Bank, 2007). Through OP/BP 4.01, the World Bank apply the EIA process for proposed projects to ensure that they are environmentally sound and sustainable (Anton & Shelton, 2011). The EIA process suggested in OP/BP 4.01 comprises of screening projects, ensuring clients' ability to carry out EIA, participating stakeholders, disclosing the EIA report, complying with the results of EIA, and monitoring the EIA implementation (World Bank-website has publicized the requirements of OP/BP 4.01 on Environmental Assessment). This process seeks to consider the likely environmental impacts of proposed projects at an early stage in the project cycle in order to minimize impacts and improve the decision-making process without affecting the authority of the borrowers. Section 4.3 discusses the EIA process in detail.

According to the EIA process provided by OP/BP 4.01, the World Bank is required to:

- Identify potential environmental impacts of proposed projects;
- Categorize proposed projects into four classes based on the type, location, and scale of the potential environmental impacts (OP 4.01, para 8);

- Review projects' EIA reports, and provides pertinent recommendations;
- Require public consultation before project implementation; and
- Observes the application of provided recommendations (OP 4.01, para. 14).

Moreover, the World Bank requires borrowers to report on:

- Their compliance with the World Bank on the results of EIA;
- The status of mitigation measures; and
- The findings of monitoring programs (OP 4.01, para. 12).

The World Bank also conducts a final monitoring function to (World Bank, 2013):

- Review project incorporation with EIA findings and provided recommendations (BP 4.01, para 19);
- Ensure that assessment processes have been conducted by environmental experts (BP 4.01, para 20); and
- Examine whether the borrower's compliance with the environmental covenants is sufficient (BP 4.01, para 21).

The above-mentioned EIA process has been executed by the World Bank to address environmental issues within public infrastructure projects. With respect to climate change, the World Bank complies with the principles of the UNFCCC, which is the primary international institution addressing global climate change, and invests heavily in renewable energy and energy efficiency projects (World Bank, 2008). As a global player and knowledge provider, the World Bank informs the global economic transformation about constraints imposed by climate change to lower unfair cost burdens on developing countries, which is of particular concern for its poorest clients. Accordingly, it formulated the Clean Energy Investment Framework together with the Action Plan (AP) to support its clients in dealing with the challenges of climate change by providing “access to energy in Sub-Saharan Africa, supporting country-led mitigation actions, and adopting to the effects of climate change” (World Bank, 2008, p. 3).

However, given the inadequate performance of MDBs in financing environmentally risky

and GHG-intensive projects (these impacts are principally addressed through the IFC's Performance Standards and are beyond the scope of this thesis), the World Bank's mandate with an associated asymmetry in its leverage over developing vis-à-vis developed countries suffers potential boundaries to fulfill its role in addressing global issues (World Bank, 2008, p. 9). Given the significant role of the World Bank in financing large infrastructure projects, an increase in international trade has expanded the domain of interaction between the public and private sectors. "The institutional relationship between international organizations, transnational corporations and civil society groups has placed the private sector at the center of global responses to environmental problems" (Wright, 2009, p. 5). Thus, the recent financial interaction has brought private banks to the front of public institutions, as leading financiers for infrastructure investments (Biermann et al., 2009).

Market reorganization and the development of emerging countries have led to rapid privatization in markets and lower limitations for foreign investment, which has resulted in long-term private foreign investment in GHG-intensive infrastructure projects (World Bank, 2004). Indeed, considerable amounts of international capital resources flow to emerging countries<sup>3</sup> where financial institutions look to invest in short-term profitable opportunities and "are not willing to face the large up-front costs, long payback periods and significant risks associated with investments in renewables" (Beg et al., 2002, p. 136). Privatization in the project finance sector quickly increases foreign investment and significantly reduces the World Bank's contribution to financing infrastructure projects (Mahidhara, 2002; World Bank, 2004). The economic growth in developing countries, which has been mainly facilitated by multilateral financing to the private sector, causes the World Bank to almost entirely withdraw from large-scale public infrastructure lending (Biermann et al., 2009).

Previously, financial institutions like the World Bank were regulating development activities in emerging markets (World Bank, 2007) and compensating their lack of environmental standards through the incorporation of environmental guidelines into their

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<sup>3</sup> "80% of private foreign investments are concentrated in 12 rapidly developing countries" (Beg et al., 2002, p. 136).

project financing (Lawrence & Thomas, 2004). Over time, the increasing dependency on the World Bank made its guidelines as dominant environmental framework for international investments in the developing countries (Hardenbrook, 2007). Recently, investing in infrastructure development projects has shifted from MDB to private financial institutions, that initially did not comply with the World Bank's environmental guidelines and undermined environmental issues caused by their lending activities (Monahan, 2005). Consequently, the environmental standards in markets suffering inadequate environmental policies are often dependent on private institutions (Hardenbrook, 2007; Lawrence & Thomas, 2004), which led to the development of environmentally risky projects.

During the period of 1980 to 1990, NGO advocacy campaigns against structural adjustment programs of the World Bank resulted in the divestiture of public infrastructure development investments (Mahidhara, 2002; Wright & Rwabizambuga, 2006). Consequently, the World Bank, which has initiated a framework for monitoring and distinguishing environmentally risky projects, has become “an imperfect delegated monitor since it does not review all large projects in emerging countries” (Amalric, 2005, p. 10). The World Bank acts as an institution delegated to evaluate the level of environmental consideration in public projects and has mainly been developed to respond to public infrastructure projects and does not review private projects in emerging countries. The increasing share of the private sector in the investment market, in conjunction with the bad experiences of the Three Gorge Dam project<sup>4</sup> in China, revealed the inadequate contribution of the World Bank to addressing the environmental impacts of private investments in emerging countries (Amalric, 2005; Fox & Brown, 1998).

This inadequacy triggered NGOs and other stakeholders to reshape the World Bank's engagement in assessing environmental impacts within the project finance sector. In response, the World Bank enhances the operational programs of the IFC, its private

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<sup>4</sup> The three Gorges Dam is the largest dam project in history, recently completed in China, with major environmental impacts on the surrounding area. The massive size of the project makes the area more vulnerable to ecosystem disruption. The environmental impacts reach much further downstream in the forms of erosion, ecosystem degradation and landslides that affect species in the area and water quality. “The Three Gorges Project is being built without funding from the World Bank, but with major support from official export credit agencies and private banks” (International Rivers Network, 2003, p. 2).

sector lending arm, to expand the domain of its involvement in financing private projects. The IFC is the organization within the World Bank supporting economic development through providing private financial support and monitoring private investments in emerging countries (Benoit, 1996; Biermann et al., 2009).

### **3.4 The International Finance Corporation**

The International Finance Corporation (IFC) has been mandated by the World Bank and shares the World Bank mission to reduce global poverty. It promotes private sector development by “encouraging the growth of productive private enterprise in member countries, particularly in the less developed areas” (Biermann et al., 2009). The IFC associates with private investors to finance the improvement of infrastructure projects contributing countries’ development and to help developing countries take advantage of synergies between global climate and local development benefits (World Bank, 2008). The IFC believes that an important effort to achieve the positive outcomes of these activities is to pursue environmental sustainability through a comprehensive set of environmental standards. As a result, IFC invests in development projects with the intent to do no harm to the environment and to enhance the sustainability of private sector operations in order to achieve positive development outcomes (IFC, 2002).

Regarding the environmental impacts of investment activities, the IFC introduces the Procedures for Environmental and Social Review, and stipulates eight specific Performance Standards<sup>5</sup> on environmental and social sustainability as a direction for project financing (Boisson de Chazournes, 2000; Hunter, 2007; Park, 2005). These standards, which are an internal procedure for managing environmental issues, were mainly developed according to the World Bank’s environmental policies, including OP 4.01 and Environmental, Health, and Safety (EHS) Guidelines. Similar to the World Bank, the IFC gives significant importance to EIA as a tool for impacts assessment. For example, the IFC’s Procedures for Environmental and Social Review states that “the IFC’s Operational Policy 4.01 requires a full Environmental Assessment for Category A

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<sup>5</sup> The IFC Performance Standards seek to manage different types of environmental and social issues, including: (1) Assessment and Management of Environmental and Social Risks and Impacts; (2) Labor and Working Conditions; (3) Resource Efficiency and Pollution Prevention; (4) Community Health Safety and Security; (5) Land Acquisition and Involuntary Resettlement; (6) Biodiversity Conservation and Sustainable Management of Living Natural Resources; (7) Indigenous Peoples; and (8) Cultural Heritage (IFC, 2012).



projects - this is normally an Environmental Impact Assessment”. It notes “the EIA report ... identifies and assesses the potential environmental and social impacts of the project, evaluates alternatives, and recommends appropriate mitigation, management, and monitoring measures”.

In the context of climate change, the IFC aims to support economic development in countries in conjunction with helping mitigate and adapt to climate change impacts. It plays a substantial role in enhancing the interaction between global climate change and local development, by promoting sustainable investments. Climate change is considered to be a priority in the IFC’s sustainability pillar. “The IFC is well placed to be a leader with ideas in respect to the role of the private sector and climate-friendly investment in developing countries” (World Bank, 2008, p. 18). It recognizes that serious climate-related impacts affect development activities, and thus works with the private sector to address climate change. The core principles of the IFC’s to address climate change include “actions on: (a) enhanced support for renewable energy and energy efficiency investment; (b) partnerships to address climate change mitigation and adaptation; and (c) extending carbon finance activities” (World Bank, 2008, p. 18). Owing to the important role of the private sector in GHG reduction, “the IFC engages in innovative investments and advisory services to support climate-friendly solutions and opportunities for business” (IFC, 2012, p. 3).

Following the climate-related commitments, “the IFC builds on its experience...in the development of GHG accounting and approaches to climate change risk assessment, to produce instruments and develop practices that allow its clients to consider climate-related risks and opportunities in their investment decisions” (IFC, 2012, p. 3). To this end, the IFC developed the Cleaner Production Program for assessing opportunities to implement energy efficiency processes and to reduce GHG emissions in IFC’s portfolio. It also requires borrowers to follow the Performance Standard 3 and to report regularly on their GHG emissions (see Chapter 6).

The IFC helps private companies to identify climate change risks and advises them on managing associated impacts through quantifying carbon footprints, considering the best

available technologies, and recommending tools to offset carbon emissions. It puts efforts to overcome poverty in developing nations, facilitate sustainable growth, and balance between supporting economic development in host countries and addressing climate change. The IFC is a well-developed leader positioned to recognize the importance of the private sector in achieving climate-friendly investments in developing countries. However, because many development projects with adverse environmental impacts generate the most revenues, addressing environmental issues is a very controversial process (Biermann et al., 2009).

Since the 1990s, with a noticeable switch in the project-financing sector to private investments, the IFC has experienced a significant growth whereby it accounted for one-quarter of total multilateral and bilateral financing in the private sector (Hardenbrook, 2007). Market reforms in emerging markets led to the significant privatization of the project-financing sector the long-term private capital flows to development projects. By privatization, MDBs increasingly invest in infrastructure projects that not only contribute to countries' development but also “ have a profound impact on the environment and local communities” (Biermann et al., 2009, p. 56). For example, the IFC together with a number of project financiers provided \$3.6 billion to the Baku-Tblisi-Ceyhan oil pipeline project. In such infrastructure projects, “commercial banks took comfort in the participation of a multilateral lender, as they enjoyed a ‘preferred creditor status’ and were in position to secure a political commitment from host governments not to introduce policies or regulations that would adversely affect the borrowers’ future capacity to service loan payments” (Wright, 2009, p. 5).

Infrastructure investment activities are considered to have significant levels of environmental impacts that should be carried out during the life of projects. However, “In general terms, the notion that the consideration of environmental and social issues is political territory and falls outside of the commercial mandate of private sector financing was for long the prevailing view, and remains contested” (Wright, 2009, p. 6). Although all development banks have agreed to protect the environment during investment projects (Gutner, 2002), their operations predominantly revolve around the maximization of investment profits, without adequate attention to environmental issues and sustainability

(Park, 2005).

Profit maximization in project finance undermines externality problem (i.e., environmental issues), particularly in developing economics (Sauermann, 1986). “Such economies and their governments experience high volatility, providing investors with a “get in and get out” mentality that gives little concern to either environmental or social problems created as a result of the venture” (Schepers, 2011, p. 92). The governments of these countries are often ineffective or unwilling to monitor the projects and consider their environmental impacts, and thus have little incentive to address the externality problem.

Previously, a high level of the criticisms against environmental impacts of infrastructure projects was directed towards MDBs (Gutner, 2002). Since multilateral banks mainly supported infrastructure projects and were responsible for their environmental impacts, they became valid targets for environmental criticisms. “But the expansion of the project finance market in the early 1990s, and the growing public visibility of commercial banks as arrangers and financiers of large projects, revealed the extent to which the decisions regarding the management of environmental and social impacts of large projects were often taken by commercial banks and private borrowers” (Wright, 2009, p. 7). The growth of the project finance sector and the expansion of commercial banks’ position as financiers of infrastructure development projects disclosed the integral role of project financiers in managing environmental impacts of projects (Biermann et al., 2009).

In myriad cases, private project financiers have financed a project that had already been refused by a multilateral bank as they were in violation of applicable environmental regulations (Missbach, 2004). In 2000, civil society campaigns and NGOs accused project financiers of financing infrastructure projects that heavily violated environmental regulations. Biermann et al. (2009) states that “NGOs alleged that the commercial banks bore some responsibility for the adverse impacts of their project financing and demanded that they directly confront irresponsible or negligent borrowers” (p. 59).

For instance, NGOs initiated a public campaign against the Citigroup for its investmnet in

Chad-Cameroon pipeline that adversely affected the bank's reputation and led to consumer boycotts. The Rainforest Action Network's launched a shaming campaign against Citigroup's old-growth logging and oil pipeline project in Ecuador (Nguyen, 2007). Other banks like WestLB, Morgan Stanley, and Westpac also felt the pressure from NGOs for their participation in financing projects that were deemed socially or environmentally destructive.

The Three Gorges Dam in China is a notable case that the World Bank declined to invest in the dam due to its environmental impacts, but a number of private financial institutions provided funding to the project (Snyder & Muir, 2005). Financing environmentally risky projects despite the World Bank's refusal led to the groundswell of public opposition to private financial institutions. As such, NGOs shift their focus from the companies directly constructed the projects onto the private institutions bankrolling the projects (Harvey, 2005). Public scrutiny of bank activity can negatively affect their reputation and create decrease their revenues (Monsma & Buckley, 2004). In response, private banks began to expand their investment portfolios to include environmental considerations that go above the regulations of host countries.

Consequently, in 2002, a group of private project financiers in conjunction with the IFC decided to arrange a meeting to discuss environmental impact management in projects. This discussion was triggered by the growing reputational pressure from NGOs such as Bank Track, Bank Watch, Friends of the Earth, Greenpeace, Human Rights Watch, International Rivers Network, Rainforest Action Network, and World Wide Fund for Nature. They discussed the growing criticisms levied against private project financiers for investing in projects that significantly affect the environment. This meeting formed a working group to explore an adequate procedure for project financiers to review the environmental impacts of their investment activities (Lazarus, 2004). The working group collaborated with the IFC to provide a set of standards for private project financiers to assess and manage the environmental impacts in the project-financing sector. In April 2003, the four commercial banks of the working group announced that they "had considered a set of environmental and social standards for project finance investment that would be suitable for commercial banks" (Biermann et al., 2009, p. 60). These proposed

standards were named the Equator Principles (EPs) to show the common intention among private project financiers to create a global environmental framework.

### 3.5 Equator Principles

As discussed above, the project-financing sector has been under pressure since the mid-1960s, when the World Bank and IFC were severely criticized for providing loans to environmentally risky projects in emerging countries (Budhoo, 1994). The groundswell of social opposition to these financial institutions continues and also denounces commercial banks due to their investments in risky projects, and pressures them into bringing sustainable development to the mainstream<sup>6</sup> of their economic activities (Collevocchio Declaration, 2003).

Traditionally, private banks passively complied with mandatory regulations, but that this “reactionary stance is evolving, and private institutions are beginning to take an increasingly proactive role by self regulating” (Hardenbrook, 2007, p. 203). As these banks continue to play an integral role in project financing, they have begun to regulate their own activities in response to the external pressures of shareholder, stakeholder, and environmental institution regarding sustainable development. To this end, the EPs were voluntarily created in 2003 by ten large international private banks as a means of regulating their project-financing activities in order to facilitate sustainable development within the project-financing sector (Equator Principles, 2006). The EPs “is a risk management framework, adopted by financial institutions, for determining, assessing and managing environmental and social risk in projects. It is primarily intended to provide a minimum standard for due diligence to support responsible risk decision-making” (EPs-website). According to the EPs:

*“sustainability is a widely discussed topic among corporations and is also a commitment that a company makes in its pursuit of CSR. The underlying connotation of corporate sustainability encourages corporations to embrace environmental, social, and governance issues as a strategic tool*

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<sup>6</sup> Mainstreaming is “the process of systematically integrating a selected value/idea/theme into all domains of...cooperation to promote specific [and] general development outcomes” (European Commission, 2013, p. 10). Mainstreaming sustainable development involves serious changes in the behavior of financiers in order to balance between economic, environmental, and social values.

*to modify corporate management system and operation model while seeking profits” (EPs-website).*

Macve & Chen (2010) states “constructing a kind of “bottom up” framework, but leaving the decision on adoption as voluntary”, the EPs are an example of soft law” (p. 981). “Adoption of the Principles by a financial institution is voluntary but once such adoption has been made, the adopting entity must take all appropriate steps to implement and comply with the Principles” (Equator Principles, 2013a, p. 6). Scholars such as Conley & Williams (2011) state that “by voluntarily choosing to adopt the EPs, the Equator banks have become de facto “sustainability regulators,” acting in ways that can be characterized as both responsible and sustainable” (p. 543). Hardenbrook (2007) notes the EPs represent a “proactive stance in the area of environmental regulation and are a major change in the private sector’s traditional role” (p. 203). Since private banks had faced a range of stakeholders requiring to adhere to a framework of sustainable development, the EPs may represent the positive response of the banks “to consider what form behavior should take, by motivating businesses to act in certain ways and by emphasizing the need for open and transparent disclosure of corporate activities” (Macve & Chen, 2010, p. 984). The EPs then can provide a potential means of environmental standard that address some of sustainable development tensions within the project-financing sector in order to positively respond to financial, social, and ethical concerns caused by investing in environmentally risky projects.

The EPs is an effort of private commercial banks to establish a voluntary code of conduct for managing socio-environmental impacts of large-scale development projects (Schepers, 2011). “In particular, the EPs aim at socio-environmental stewardship, that is, the protection of ecosystems and the respect for human rights, while at the same time not to lose track of economic rationales” (Wörsdörfer, 2015, p. 6). As such, the EPs can be considered to be a international environmental initiative attempting to fill the gap between environment, society, and economy within the project-financing sector (Haack et al. 2010).

Therefore, the Equator Principles Financial Institutions (EPFIs) can adhere to the EPs by

considering additional environmental requirements in its investment portfolios, as well as by developing internal screening and monitoring procedures (Hardenbrook, 2007). Similarly, Wright & Rwabizambuga (2006) argues that “adopting the EPs can add value to a firm. They refer specifically to improved corporate reputation and branding; increased competitiveness; increased access to capital markets and financing; and decreased scrutiny in public consultation hearings and approval processes. They argue that each of these factors can reduce a firm’s project cost and associated expenses. More generally, they argue that a firm’s adoption of a voluntary code may also allow it to more effectively respond to the variety of pressures exerted on it by multiple stakeholder groups” (p. 94). “The EPFIs can maintain an environmentally conscious image, which may prevent losing investments from these socially responsible investment groups. Moreover, a company that may have acquired a reputation as being environmentally irresponsible may be able to enhance its corporate image by adopting the Equator Principles” (Hardenbrook, 2007, p. 18). By adopting the EPs, the EPFIs can manage economic, reputational, and legitimacy risks caused by project-financing activities. This is because the EPFIs positively respond to economic, social, and ethical pressures exerted on them to integrate sustainable development into their decision-making. Chapter 4 thoroughly analyzes the underlying theories that shape the EPFIs behaviors and examines motivators that encourage the EPFIs to move towards sustainable development.

### **3.5.1 Functional Linkage between the World Bank, IFC, and EPs**

The EPs are a framework that requires the EPFIs to consider socio-environmental issues of their project-financing activities. The EPs specify that “the current standards required shall be either:

- I. The IFC Performance Standards and the World Bank Group Environmental, Health and Safety Guidelines where projects are located in countries that are not on the list of Designated Countries<sup>7</sup>, or

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<sup>7</sup> Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea Rep, Luxembourg, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, United Kingdom, and United States (EPs-website).

- II. Local or national law relating to environmental and social matters where projects are located in countries on the list of Designated Countries” (Equator Principles, 2013a, p. 4).

The EPs introduce the World Bank's EHS Guidelines and particularly the IFC's Performance Standards as best practice standards for project-financing activities in non-designated countries. The involvement of the IFC in promoting the EPs together with commercial banks' decision to base project financing standards on the IFC's internal policies make the IFC a valuable reference to manage environmental and social risks caused by private investment in developing countries. For example, regarding project categorization, EPIII explicitly requires the EPFIs to screen proposed projects based on the environmental and social categorization process of the IFC and draws on the legitimizing role of the IFC as a neutral authority within the project-financing sector.

Moreover, apart from an organizational structure focusing on project transactions, “it [the IFC] remains firmly wedded to its original purpose of mobilizing financial resources in support of financially viable private sector projects in developing countries” (Wright, 2009, p. 10). Given the IFC's goal of identifying financially viable transactions, it seeks to facilitate sustainable development through managing environmental and social issues in the project finance sector (IFC, 2002; Wright & Rwabizambuga, 2006). Doing so is not only linking the IFC's socio-environmental mission with the concept of CSR, but also highlighting that development investment is a prerequisite for addressing environmental issues (Wright, 2009). Accordingly, the commercial banks formulate the EPs in commensurate with the IFC, and thus the EPs are a brief version of the IFC.

Therefore, the IFC and EPs are remarkably consistent and the EPFIs are required to beyond with the IFC's Performance Standards. But in some circumstance, the EPIII goes beyond the IFC's Performance Standards and imposes more stringent requirements for project-financing activities, particularly in the context of climate change management. For example, for GHG reporting, EPIII notes: “the EPFI will require the client to report publicly on an annual basis on GHG emission levels (combined Scope 1 and Scope 2



Emissions) during the operational phase for Projects emitting over 100,000 tonnes of CO<sub>2</sub> equivalent annually” (p. 10), while the IFC provides no guidance on how project-related GHGs should be publicized. Further, regarding alternative analysis, Equator Principles Implementation Note (2014) clearly states that “[a]ll Projects emitting more than 100,000 tonnes of CO<sub>2</sub> equivalent annually (combined Scope 1 and Scope 2 Emissions) during the construction and/or operational phase” are required alternative analysis. However, the IFC just require clients to “consider alternatives and implement technically and financially feasible and cost-effective options to reduce project-related GHG emissions during the design and operation of the project” (p. 24). The IFC is relatively limited and fails to consider construction phase-associated GHGs and to formulate a threshold for the level of GHGs requiring projects to be considered under alternative analysis. In such circumstances, the EPFIs will implement the requirements of the EPs.

### **3.5.2 Describing the Evolution of the EPs**

The EPs’ policies for socio-environmental sustainability and corporate responsibility are regularly overseen by the EPFIs and NGOs. The EPFIs indicate that “[we] review the Equator Principles from time-to-time based on implementation experience, and in order to reflect ongoing learning and emerging good practice” (Equator Principles, 2013b). Furthermore, NGO pressure is an ongoing process that continually monitors the comprehensiveness of the EPs and observes banks’ compliance with this framework (Wright & Rwabizambuga, 2006). “This revision process demonstrates a unique interplay between the EPFIs and NGOs. Instead of the traditional method of the NGOs using public criticism to motivate change in the private sector, the private and public sectors in this circumstance had a more open line of communication” (Hardenbrook, 2007, p. 224). Thus, the EPs benefit from equator banks’ experiences and NGO consultation to revise their policies in order to achieve better results for sustainable development, corporate responsibility, good reputation, and long-term financial credit. This continuous contact and dialogue are part of the EPs’ development and provide constructive feedback for the EPs’ revisions.

#### ***3.5.2.1 Development of EPI, EPII, and EPIII***

Since their development, the EPs have undergone two revisions, in 2006 and 2012, leading to the launch of the latest version in 2013 (EPIII). First version of the Equator

Principles (EPI) had been adopted by 40 financial institutions (Equator Principles, 2006). The increasing adoption of EPI made it an international framework for developmental projects (Kinley & Tadaki, 2004). However, three years after EPI, public scrutiny required its revision.

In July 2006, the EPFIs launched the Equator Principles II (EPII) that was “backward looking in the sense that the EPs had been operational for three years” (Weber & Acheta, 2014, p. 10). This revision was in response to NGO criticism of the EPI’s insufficiency to address important contextual issues and to incorporate the recent changes in the IFC Performance Standards, which came into effect in April 2006 (Lee, 2007; Wörsdörfer, 2013). EPII was drafted to cover broader environmental and social risks, to expand the domain of reporting, to publicize related information, and to raise the level of scrutiny for companies that adhere to these guidelines. (Amalric, 2005; Equator Principles, 2006; Nguyen, 2007; Weber, 2014; Wright & Rwabizambuga, 2006).

After ten years of the EPs’ experiences in dealing with socio-environmental issues, some aspects of the EPs were still challenging for the EPFIs, stakeholders, and NGOs. The EPFIs “express concern about whether the narrow definition of project finance has diminished the relevance of the EPs to a small and declining portion of their financial portfolios, especially in light of general financial market trends of recent years” (Lazarus & Feldbaum, 2011, p. 3). Stakeholders are also disappointed with the lack of transparency and accountability to third parties, as well as “a prevailing view that the limited and inconsistent reporting of the EPFIs make it difficult to evaluate their performance” (Lazarus & Feldbaum, 2011, p. iii). Stakeholders who has worked with the EPFIs state “the continuous lack of substantial transparency and disclosure... has the counter-effect of making some external stakeholders perceive this as being indicative of inadequate levels of EPFI responsibility and accountability” (Lazarus & Feldbaum, 2011, P 2). Since the EPs are voluntary guidelines, “there is an inherent lack of publicly disclosed information” (Hardenbrook, 2007, p. 209). Morimoto (2012) states that “the transparency and accountability are diluted because of the nature of EPs; sponsored by an industry association and an integrated environmental and social risk framework in a competitive project finance business area are not transparent activities” (p. 56). Based on

the confidentiality of these investment agreements, the EPFIs do not publicize project-associated information that might demonstrate project failure to meet the EPs' standards (Balch, 2003). This lack of transparency reduces public ability to assess whether the EPs are being effectively implemented (Hardenbrook, 2007). NGOs also "are disappointed with the lack of transparency, accountability, effectiveness and true compliance with the principles and lack of progress in their development" (Mathiason, 2010). For instance, Bank Track "criticized many aspects of the Principles, such as the non-transparent way they are being applied, leaving stakeholder effectively in the dark on their effects" (Bank Track-website). NGOs assert that the lack of reporting standards and publicly disclosed information are major problems that significantly decrease EPs transparency. This non-transparency can affect the accuracy of projects' information and nullify the EPs attempt to address sustainability issues. In addition, NGOs state that the EPs set forth restrictions that limit the scope of their application. For example, the EPs only affect direct financing. However, a bank frequently will act as a "financial advisor, underwriter, arranger or lead manager" on a project (Missbach, 2004, p. 79). Accordingly, the EPFIs can support an environmentally risky project while it is beyond the mandates of the EPs if the funding is not derived from direct financing.

The above-mentioned criticisms continued to the extent that the EPII was upgraded to EPIII, in 2013. Currently, "83 EPFIs in 36 countries have officially adopted [EPIII], covering over 70 percent of international Project Finance debt in emerging markets" (EPs-website). EPIII goes beyond the lessons and experiences of previous versions to include contemporary and rapidly evolving issues such as climate change, to expand membership, to improve the consistency of implementation across members, and to promote transparency.

### **3.5.3 Understanding the Requirements of EPIII**

Following the NGOs' criticisms against EPII, the EP Association<sup>8</sup> initiated the Strategic Review in accordance with the IFC updated sustainability framework to produce a series

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<sup>8</sup> "The Equator Principles (EP) Association is the unincorporated association of member Equator Principles Financial Institutions (EPFIs) whose object is the management, administration and development of the EPs. The EP Association was formed on 1 July 2010 and was instituted to ensure long-term viability and ease of management of the member EPFIs" (EPs-website).

of recommendations on key thematic areas in order to draft EPIII. The EP Association is an unincorporated group of 13 equator banks that are in charge of overseeing the EPs framework, managing their responsibilities, and developing their principles (EPs-website). In 2011, the EP Association developed the Strategic Review to assess the future of the EPs. “The main purpose of the Strategic Review was to take stock of the current state of the EPs, to develop a better understanding of the challenges and successes” (EPs-website), and to draft EPIII.

During the Strategic Review, the EP Association involved its members and stakeholders to recognize areas of strengths and weaknesses in EPII. The Strategic Review included EPIII updating procedures to reflect the stakeholders’ recommendations and to reflect recent changes in the IFC standards on which the EPs are based. The Review has recommended a strategic vision for the EPs:

*“The Equator Principles needs to advance as an organization and create a sustainable platform for its success and continued development, and to assert its leadership role in environmental and social risk management in the financial industry. It must excel at delivering its core mission...of ensuring that the projects that its members finance are developed in a socially responsible manner and using sound environmental management practices. At the same time, it must expand its membership to encompass new entrants in the project finance market, broaden its scope to accommodate the greater ambitions of its members, and address evolving environmental and social risk management needs”* (Equator Principles, 2011, p. 2).

The strategic vision requires the EPs to “remain relevant and applicable as a risk management tool for project finance and financing of large infrastructure developments” (EPs-website). In so doing, the EPs updated their policies to be considered as a practical risk management framework for sustainable financing objectives. The updating process of EPII to EPIII was conducted in three distinct phases. In **July 2011-August 2012**,

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**through** an internal process, EPs’ Working Groups and the EP Association discussed on how the EPs might be updated to reflect the recent changes of IFC standards and current best practices.

They analyzed various proposals to prepare the first draft of EPIII for the public consultation. In the second phase, **August-October 2012**, public consultation gave all stakeholders an opportunity to review EPIII’s initial draft and to make suggestions for its further improvement. In the third phase, **June 2013**, EPIII was finalized and formally launched based on stakeholder feedback, the IFC standards, and the EP Association recommendations (EPs-website).

Scholars believe “these [EPIII’s] changes mark an important evolution in best practice in environmental and social risk management of particular importance for both bankers and those seeking access to capital” (Torrance, 2012, p. 1). EPIII includes a number of requirements to achieve better results in transparency and climate change due diligence, and human rights. EPIII presents an opportunity for all the EPFIs to review their compliance with EP. Following description reviews EPIII and represents its principles.

### ***3.5.3.1 What stays the same in EPIII?***

**Overall Purpose of the EPs:** EPIII requires EPFIs “to not provide Project Finance or Project-Related Corporate Loans to Projects where the client will not, or is unable to, comply with the Equator Principles” (Equator Principles, 2013b, p. 2)

**Principle 1, Review and Categorization:** EPIII requires the EPFIs assess the level of project-associated risks and to categorize them as either Category A, B, or C.

**Principle 2, Environmental and Social Impact Assessment:** EPIII requires the development of an Environmental and Social Impact Assessment (ESIA) for all Category A and B projects, evaluating project-associated risks.

**Principle 3, Application of Environmental and Social Standards:** For projects in Designated Countries, EPIII requires compliance with relevant “host country laws,

regulations and permitting requirements that pertain to environmental and social issues” (Equator Principles, 2013b, p. 15). For projects in Non-Designated countries, EPIII requires compliance with the IFC standards and the World Bank Environmental, Health and Safety Guidelines.

**Principle 4, Environmental and Social Management System and Equator Principles Action Plan:** EPIII requires clients to develop an Environmental and Social Management System and Environmental and Social Management Plan to address issues raised in the ESIA

**Principle 5, Stakeholder Engagement:** EPIII requires client to “to demonstrate effective Stakeholder Engagement as an ongoing process in a structured and culturally appropriate manner with Affected Communities and, where relevant, Other Stakeholders” (Equator Principles, 2013b, p. 7)

**Principle 6, Grievance Mechanisms:** “For all Category A and, as appropriate, Category B Projects, the EPFI will require the client, as part of the ESMS, to establish a grievance mechanism designed to receive and facilitate resolution of concerns and grievances about the Project’s environmental and social performance” (Equator Principles, 2013b, p. 8).

**Principle 7, Independent Review:** “For all Category A and, as appropriate, Category B Projects, an Independent Environmental and Social Consultant, not directly associated with the client, will carry out an Independent Review of the Assessment Documentation including the ESMPs, the ESMS, and the Stakeholder Engagement process documentation in order to assist the EPFI's due diligence, and assess Equator Principles compliance” (Equator Principles, 2013b, p. 8).

**Principle 8, Covenants:** “For all Projects, the client will covenant in the financing documentation to comply with all relevant host country environmental and social laws, regulations and permits in all material respects. The EPFIs need the borrower to:

- a) To comply with the ESMPs and Equator Principles AP; and

- b) To provide periodic reports in a format agreed with the EPFIs to document compliance with the ESMPs and Equator Principles AP and to provide representation of compliance with relevant local, state and host country environmental and social laws, regulations and permits; and
- c) To decommission the facilities, where applicable and appropriate, in accordance with an agreed decommissioning plan” (Equator Principles, 2013b, p. 9).

**Principle 9, Independent Monitoring and Review:** “To assess Project compliance with the Equator Principles and ensure ongoing monitoring and reporting after Financial Close and over the life of the loan, the EPFI will, for all Category A and, as appropriate, Category B Projects, require the appointment of an Independent Environmental and Social Consultant, or require that the client retain qualified and experienced external experts to verify its monitoring information which would be shared with the EPFI” (Equator Principles, 2013b, p. 10).

**Principle 10, Reporting and Transparency:** The EPIII will continue to set out specific requirements for public reporting of environmental and social data, including the ESIA and ESMP and specific reporting requirements in relation to greenhouse gas emissions. Requirements for annual reporting by the EPFIs of EP activity are also specified.

### *3.5.3.2 What Is New in EPIII?*

#### **3.5.3.2.1 Expanded scope and public disclosure**

As before, the EPFIs are asked to apply EPIII where total project capital costs are US\$10 million or more. However, in accordance with project financing definition<sup>9</sup>, the EP Association was concerned “that project financings with challenging environmental and social risks were being disguised as corporate loans to avoid application of the EPs” (Torrance, 2014, p. 1). Thus, it recommended EPIII should widen the scope of the agreement to include:

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<sup>9</sup> The EPs define project financing as: “a method of funding in which the lender looks primarily to the revenue generated by a single project, both as a source of repayment and as security for the exposure. This type of financing is usually for large, complex and expensive installations that might include, for example, power plants, chemical processing plants, mines, transportation infrastructure, environment and telecommunications infrastructure” (EPs-website).

1. “Project Finance Advisory Services where total Project capital costs are US\$10 million or more.
2. Project Finance with total Project capital costs of US\$10 million or more.
3. Project-Related Corporate Loans.
  - I. The majority of the loan is related to a single Project over which the client has Effective Operational Control (either direct or indirect).
  - II. ii. The total aggregate loan amount is at least US\$100 million.
  - III. iii. The EPFI’s individual commitment (before syndication or sell down) is at least US\$50 million.
  - IV. iv. The loan tenor is at least two years.
4. Bridge Loans with a tenor of less than two years that are intended to be refinanced by Project Finance or a Project-Related Corporate Loan that is anticipated to meet the relevant criteria described above” (Equator Principles, 2013, p. 3).

The IFC new standards need clients to annually publicize project’s reporting based on comments from stakeholder engagement or grievances (Torrance, 2014). Based on the IFC, EPIII needs clients to implement the process of “Informed Consultation and Participation” and “Free, Prior and Informed Consent” where projects affecting indigenous peoples in Non-Designated countries.

### **3.5.3.2.2 Climate change due diligence (EIA)**

Besides all requirements recently considered in EPIII, climate change due diligence is among evolving issues that are clearly mentioned in the preamble. The EPFIs state: “[w]e recognise the importance of climate change ..., and believe negative impacts on ... the climate should be avoided where possible. If these impacts are unavoidable they should be minimised, mitigated, and/or offset” (p. 2). Thus, EPIII incorporate climate change issues into EIA and require the EPFIs to carry out the EIA process in partnership with clients. As such, the EPFIs will categorize proposed projects, and based on the outcomes of project categorization, they require clients to implement the rest of the EIA process to take satisfaction from the EPFIs. EPIII states that “[f]or all Category A and Category B Projects, the EPFI will require the client to conduct an Assessment [EIA] process to address, to the EPFI’s satisfaction, the relevant environmental and social risks and



impacts of the proposed Project” (p. 5). For example under Principles 2, the EPFIs require clients to consider alternative analysis and states that “when combined Scope 1 and Scope 2 Emissions are expected to be more than 100,000 tonnes of CO<sub>2</sub> equivalent annually, an alternatives analysis will be conducted to evaluate less Greenhouse Gas (GHG) intensive alternatives”. Principle 10 also notes “The client will publicly report GHG emission levels (combined Scope 1 and Scope 2 Emissions) during the operational phase for Projects emitting over 100,000 tonnes of CO<sub>2</sub> equivalent annually” (p. 10). Section 5.2.2.3 contextualizes this number and clarifies this level of GHGs in the contexts of different guidelines for GHG management.

### **3.6 Summary**

In conclusion to Chapter 3, climate change issues are a main reason requiring financial institutions to invest in less GHG-intensive projects and consider the environmental implication of their lending activities. Initially, the World Bank and IFC address environmental issues caused by project financing. The increasing capital flow to emerging countries and expanding the domain of interaction between the public and private sectors increase commercial banks cooperation within the project-financing sector. Doing so disclosed the integral role of commercial banks in managing environmental impacts and exposes them to NGOs scrutiny. In response, commercial voluntarily developed the EPs to address environmental issues in the project finance sector and EPIII demands the EPFIs and client to consider climate change due diligence by incorporating climate change issues into their EIA process. Prior to EPIII, there was no serious commitment between the EPFIs to act in accordance with climate change due diligence. EPIII is the first attempt, outside the IFC structure, that the EPFIs need to conduct alternative analysis and report on project-related GHG emissions (Equator Principles, 2013a).

However, EPIII’s climate change policies are in the early stages of implementation and there is insufficient evidence to identify their impacts on future climatic conditions; debate continues on whether EPs can address climate change and what challenges the EPFIs may face while implementing the climate change policies. In order to evaluate EPIII’ climate change policies, the following three chapters will examine why EPIII

includes climate change issues into its EIA process?, what are the requirements for incorporating climate change issues into EIA?, and how EPIII apply these requirements? Chapter 4 will explain the EPs' background theory and motivators for considering climate change throughout EIA, and describes the EIA process and the potential obstacles that can hinder climate change issues from being considered by EIA.

# Chapter 4: Equator Principles and Environmental Impact Assessment

## 4.1 Introduction

The Equator Principles Financial Institutions (EPFIs) developed the Equator Principles (EPs) to facilitate sustainable development within the project-financing sector. However, climate change represents a formidable challenge to sustainable development (IPCC, 2014a), and hinders the EPFIs achieving the goal of integrating sustainability issues into their investment decision-making (Matos & Hall, 2007). In response, in 2013, the EPFIs revised the EPs to “to think ahead about the possible consequences of [development] activities” (Morgan, 1998, p. 8) by incorporating climate change issues into project’s Environmental Impact Assessment (EIA). In order to examine the likely effectiveness of the EPs’ climate change policies, I will examine why the EPFIs have developed these voluntary policies; understanding the objectives of these policies is integral to assessing their effectiveness in achieving proposed goals.

To do so, first, I will elaborate on a group of “explanatory and normative theories” corresponding to sustainable development from financial, social, and institutional perspectives. Shareholder, stakeholder, and institutional theories help to recognize how the concept of sustainable development is diffused among banks. They also describe the sources of pressures and concerns that influence the banks behaviors towards formulating the EPs as a framework for sustainable investment. Section 4.2 describes theories that provide insights into identifying key actors and concerns in integrating sustainability issues within the EPs and in requiring the EPFIs to enhance sustainable practices.

Second, based on these theories, I will explain the “motivators” for the EPFIs to develop climate change policies. Section 4.3 will analyze how climate change issues challenging sustainable development affect the EPFIs’ credit, reputation, and legitimacy. Indeed, theories corresponding to sustainable development justify the role of credit, reputation, and legitimacy risks in motivating the EPFIs to incorporate climate change policies into EPIII.

Third, I will analyze how shareholder, stakeholder, and institutional theories shape the EPFIs' "response of acquiescence" to integrate climate change issues into EIA. Section 4.4 aims at introducing EIA as the EPFIs' response to the motivators (i.e., credit, reputation, and legitimacy risk management). Finally, I will examine potential "challenges" to the incorporation of climate change issues into EIA.

Therefore, I address the following research questions:

- What are the dominant sources of pressures for sustainable development on the EPFIs?
- What are the motivators for the EPFIs to address climate change issues?
- What are the primary response strategies that the EPFIs adopt to address economic, social, institutional pressures for climate change management?
- What are the main challenges the EPFIs may face in implementing their new climate change management strategies?

The expected findings of Chapter 4 will enable me to understand underlying principles, motivators, and potential challenges based on which I can develop a set of criteria for climate change management throughout EIA. Chapter 4 will sketch the theoretical toolkit that I will use in Chapter 5 to analyze in more detail the criteria required to incorporate climate change issues into EIA. See Figure 6.

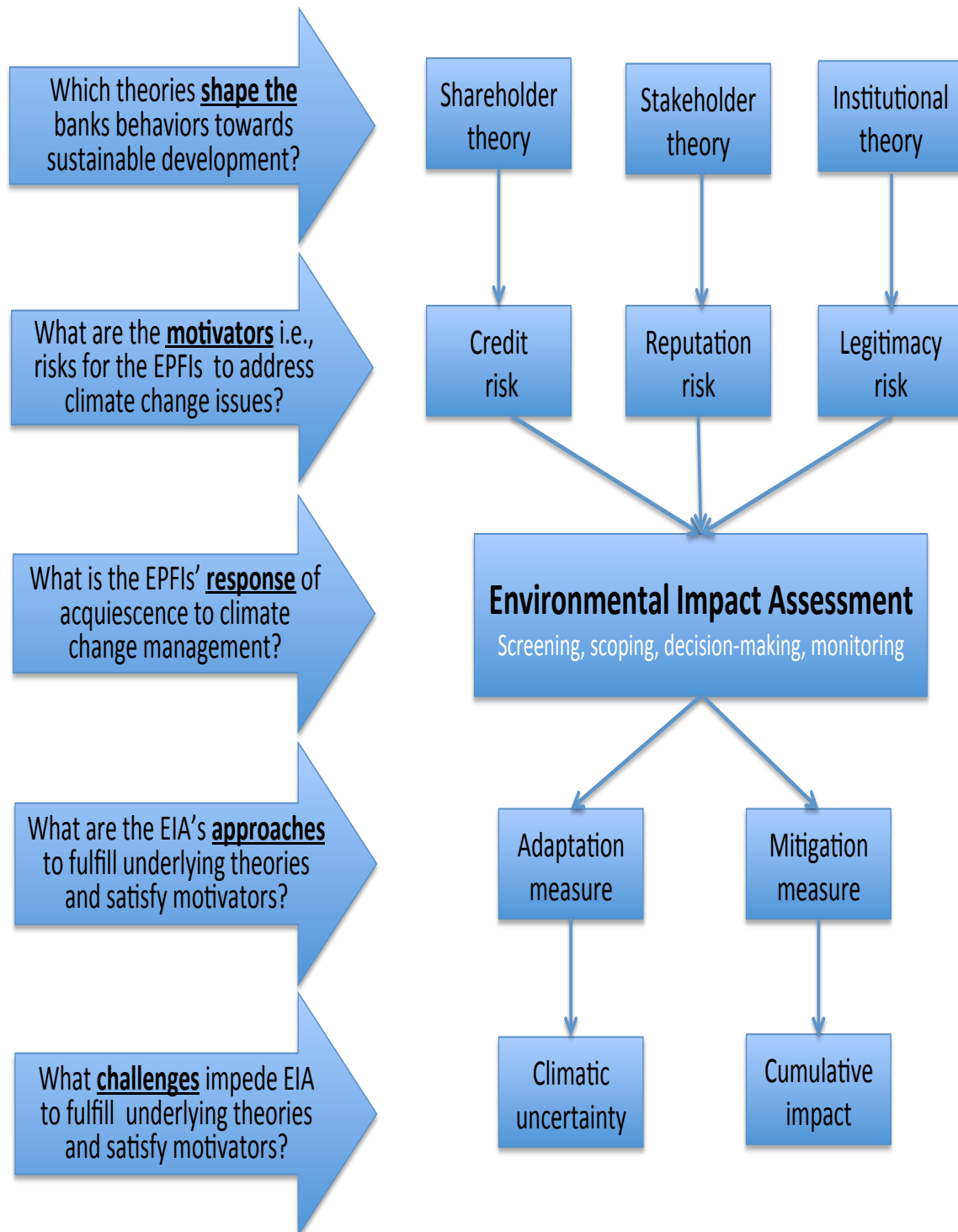


Figure 6: Conceptual framework of Chapter 4

## 4.2 Equator Principles and Sustainable Development

Shareholders, stakeholders, and institutional environment are key actors exerting pressures on commercial banks to develop a range of policy for sustainable development within the project-financing sector. Indeed, shareholder, stakeholder, and institutional theories shape the banks' behaviors to respond to pressures by formulating the EPs to consider financial, social, and legitimacy concerns throughout their project financing. Figure 7 depicts the linkage between the underlying theories and integral concerns leading to the development of EPs, as a sustainable management framework.

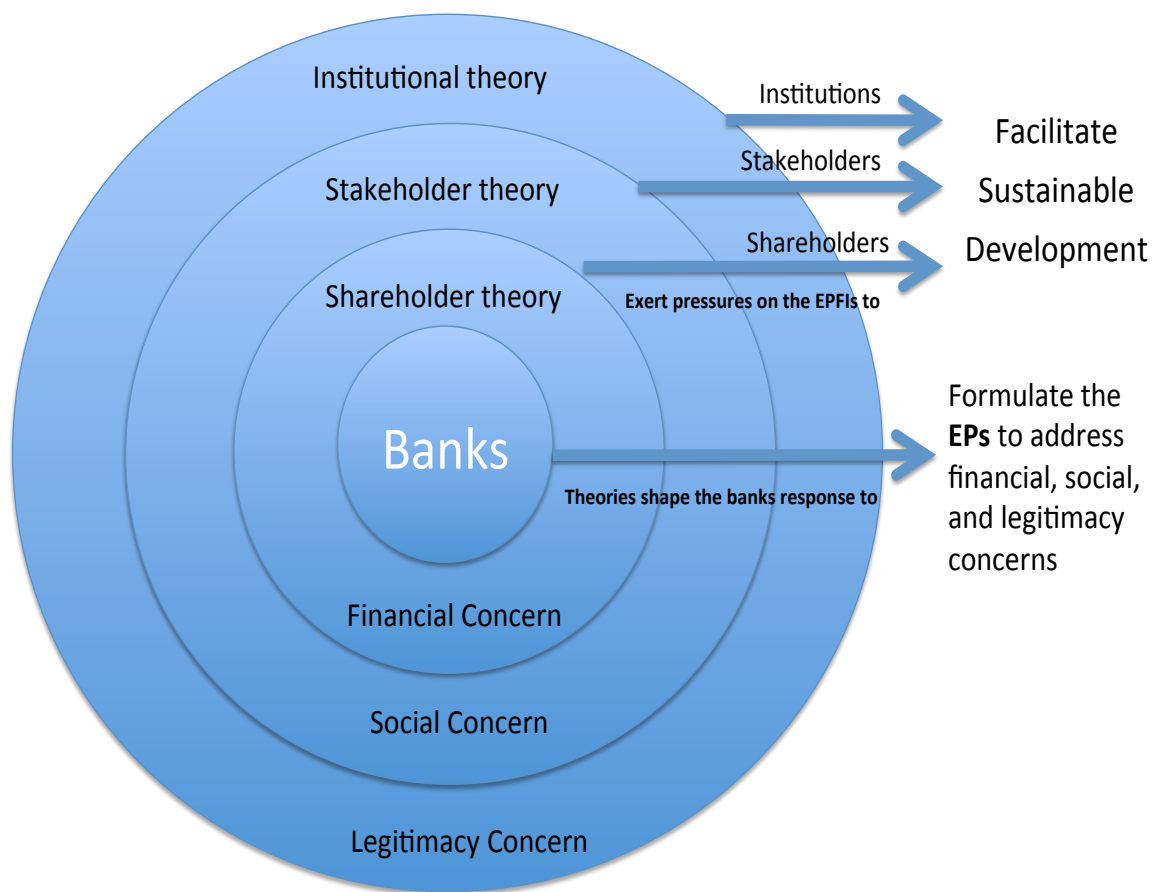


Figure 7: Linkage between underlying theories and the formulation the EPs.

## 4.2.1 Underlying Theories of Banks' Behaviors

The following sections develop a parallel structure:

- To explain shareholder, stakeholder, and institutional theories in shaping the banks' behaviors;
- To emphasize the importance of sustainable development from financial, social, and legitimacy perspectives; and
- To highlight the necessity of sustainable development, justified by the three theories, within the project-financing sector.

### *4.2.1.1 Shareholder Theory*

One of the dominant theories of organizational management is shareholder theory, which notes that the main purpose of an organization is to maximize profits and increase shareholder wealth (Friedman, 1970). This theory states that managers primarily have a duty to increase shareholders' interests in ways that are still permitted by law or social values (Lazonick & O'sullivan, 2000). The only qualification to the rule to make as much money as possible is "conformity to the basic rules of the society, both those embodied in law and those embodied in ethical custom" (Friedman, 1970, p. 4). It is based on the premise that managements are hired as the agent of the shareholders to run the company for their benefit, and thus they are legally and morally obligated to serve their interests. Friedman believes organizations are created to make money, not oversee the social or moral development of society (Smith, 2003). When organizations become involved in social or public policy issues, wealth is diverted to issues outside the core expertise of their managers. Therefore, managers should take advantage of social, environmental, and economic conditions to maximize shareholder benefits and minimize associated credit risks.

Regarding sustainable development, shareholders require managers to ensure their long-term financial interests through a sustainable usage of natural capital. Facilitating sustainable development would benefit shareholders for two reasons: limited natural capital and expensive material. First, economic activities are now entering an era in which natural capital will be increasingly limited (Daly, 1990). Large-scale economic activities heavily degrade environmental resources, providing non-substitutable materials

for economic and wealth growth (Dietz & Neumayer, 2007). Since the human economy is a subsystem of a finite global ecosystem, it is clear that growth of the economy cannot be sustainable over long periods of time unless organizations try to utilize the ecosystem in a sustainable manner. For example, in the consumption of renewable resources, organizations should have equal harvest and regeneration rates. Failure to equaling them must be treated as unsustainable capital consumption that will result in decreasing shareholders' benefits over a long time. Second, reducing energy, water, and materials consumption directly increases revenues. Therefore, organizations considering sustainable development should optimize their operating and manufacturing facilities and make them eco-efficient to minimize future costs and have a positive impact on shareholder value.

In the project-financing sector, most investment activities are linked directly to environmental resources. Infrastructure development projects like dam and power plants certainly need natural capital both for construction and operation phases, and their expected financial revenues are mainly dependent on the level of energy efficiency. Therefore, to increase shareholders' benefits, a number of commercial banks developed the EPs to integrate sustainability issues into their investment decision-making and ownership practices. In the preamble to EPIII, the EPFIs notes that large infrastructure and industrial projects can have adverse impacts on natural capital, and as financiers, they work in partnership with their clients to promote sustainable development that can lead to improved financial outcomes (Equator Principles, 2013b).

Scheltons & Dam (2007) notes that the EPs will increase the understanding of environmental and social issues within the project-financing sector and will better enable the EPFIs to control risks. Indeed, "taking social and environmental issues into account would improve the banks' understanding of the interaction of the project with stakeholders, and can improve credit risk management" (Scheltons & Dam, 2007, p. 1310). Through investing in more sustainable projects, efficiency in operations will increase and associated costs will decrease.



#### *4.2.1.2 Stakeholder Theory*

Stakeholder theory describes organizational behavior according to stakeholder relationships (Donaldson & Preston, 1995). Freeman (1984) defines a stakeholder as “[a]ny group or individual who can affect or is affected by the achievements of an organisation’s objectives” (p. 31). Stakeholder theory is intended to create real value for all stakeholders by linking socio-environmental concerns to the main business of an organization (Freeman, 1984; Loorbach & Wijsman, 2013). “Much of the argument behind stakeholder theory is that economic pressures to satisfy only shareholders is short-term thinking and organisations need to ensure their survival and success in the long term by satisfying other stakeholders as well” (Collier, 2008, p. 935). Stakeholder theory notes that the business success of organizations is dependent on ensuring short-term economic performance and on meeting long-term stakeholders by enhancing organizational reputation. Organizations have always been concerned about their reputation. Indeed, if stakeholders do not believe that what an organization is offering is satisfying their interests, there is no deal. Therefore, to sustain economic growth, a good reputation is necessary for any organization<sup>10</sup>. Many scholars argue that reputation is a key resource of a firm, and helps attract investors, customers, and employees, and can create competitive advantage (Fombrun et al., 2000).

Regarding sustainable development, stakeholders draw attention to important environmental and social impacts of organizations’ decision-making. They indicate that an organization’s operating procedures can affect stakeholders and that ignoring stakeholders’ values is ethically unjustified (Arnold et al., 2012). The environmentally risky behavior of organizations fuels stakeholder pressure on organizations to internalize sustainable development by financing in favor of all stakeholders’ interests. Stakeholders need organizations to extend the company view beyond its short-term goal of maximizing shareholders’ benefits and suggest that they should be ethically responsible for considering stakeholders’ values (Loorbach & Wijsman, 2013). Since this social opposition can influence organizations’ reputation, they try to facilitate sustainable

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<sup>10</sup> Eccles, Newquist & Schatz (2007) state that organizations that have higher reputations among stakeholders tend to be more valuable. It finds that having a higher reputation on average increases organization value by about \$1.3 billion.

development by incorporating socio-environmental interests into economic goals. Through social pressures, stakeholders require organizations to balance between economic, social, and environmental interests by explaining that the purpose of business is to create value for all stakeholders (Husted & Allen, 2011; Lee, 2011). Successful compliance with sustainable development positively impacts an organization's reputation by demonstrating its consideration of all stakeholders' interests.

In the project-financing sector, the story is similar. Commercial banks have historically provided loans to facilitate infrastructure development projects. However, these projects exploited the local areas in which they operated, leaving socio-environmental impacts for the peoples in those areas to contend with. Social and environmental activists particularly NGOs often denounced commercial banks due to their investments in environmentally risky and socially unsound projects, and required them to make sustainable development mainstream<sup>11</sup> into their economic activities (Collevecchio Declaration, 2003).

See Section 3.4. In response, in 2003, the project finance sector established the EPs as a major step toward sustainable development. The EPs constitute “a risk management framework, adopted by financial institutions, for determining, assessing and managing environmental and social risk in projects. It is primarily intended to provide a minimum standard for due diligence to support responsible risk decision-making” (EPs-website). The EPs has built a consensus among the EPFIs to integrate environmental, economic, and social priorities into their project financing (Amalric, 2005; Equator Principles, 2006; Torrance, 2012; Wright & Rwabizambuga, 2006).

#### *4.2.1.3 Institutional Theory*

Institutional theory explains factors that play key role in the adoption of strategies in organizations (Abernethy & Chua, 1996; Brignall & Modell, 2000; Lapsley & Pallot, 2000). It explains why organizations choose certain practices without an obvious economic return in order to gain legitimacy in their institutional environment (Berrone et

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<sup>11</sup> Mainstreaming is “the process of systematically integrating a selected value/idea/theme into all domains of...cooperation to promote specific [and] general development outcomes” (European Commission, 2013). Mainstreaming sustainable development involves serious change in financial behavior of commercial banks in order to balance between economic, environmental, and social values.

al., 2010; Hahn & Scheermesser, 2006). Institutional theory emphasizes that the institutional environment in which organizations operate imposes pressure on them. This pressure elicits a variety of responses as organizations seek legitimacy in order to “survive and thrive” in their environment (Scott, 2008). Suchman (1995) provides a definition of legitimacy: “a generalized perception or assumption that the actions of an entity are desirable, proper or appropriate within some socially constructed system of norms, values, beliefs and definitions” (p. 574).

Indeed, institutional theory offers a theoretical lens to identify institutional environment promoting the legitimacy of organizational practices and introduces Corporate Social Responsibility (CSR) as a prominent feature of organizations to which managers are expected to respond (Lockett et al. 2006). Vogel (2006) describes CSR in terms of “practices that improve the workplace and benefit society in ways that go above and beyond what companies are legally required to do” (p. 2). Institutional theory is at the center of what CSR is all about. CSR seeks to legitimize organizations’ practices through “the adoption ... of a strategic focus for fulfilling the economic, legal, ethical and philanthropic responsibilities expected of it by its stakeholders” (McAlister, Ferrell, & Ferrell, 2003, p. 4), and institutional theory demonstrates the pressure that influences organizations’ strategies to adopt legitimate practices.

In terms of sustainable development, institutional theory can be used to explain how key institutions, such as social values, economic incentives, and regulatory frameworks, prod organizations to develop new sustainability rules (Ball & Craig, 2010; Brown et al., 2006; Fowler & Hope, 2007; Rivera, 2004). Institutional theory demonstrates a perspective to explain the sources of pressure that affect an organization’s sustainability practice for attaining legitimacy by practicing CSR (Hahn & Scheermesser, 2006; Husted & Allen, 2006). CSR, in the context of sustainable development, has been defined as “contributes to lower operating and manufacturing costs contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large”. For companies, CSR means the integration of social, environmental, and economic priorities into their policies, strategies, decision-making, and operations to legitimize their practices. Indeed, institutions create expectations that

require organizations to adopt legitimate sustainable practices seen by institutional environment as being proper and appropriate<sup>12</sup>.

In the project-financing sector, as an institutional environment, key actors such as the World Bank, IFC, and developed countries have already formulated a set of rules on sustainable investment that reveals a growing consensus on the importance of sustainable practices. This dominant institutional environment defines sustainable practices as appropriate or legitimate, and thus renders unsustainable actions unacceptable (Scott, 2008). This institutional logic affects the decision of organizations by attracting the attention of managers to the set of concerns that are consistent with sustainable development. One publicized example in this institutional environment occurred in 2003 when ten private commercial banks developed the EPs and announced new standards centered on sustainability practices and CSR. The dominant concept of sustainable development affects how the EPFIs make decisions to maintain their legitimacy through practicing CSR. In the preamble to the EPs, the EPFIs clearly express their intentions: “we will not provide loans directly to projects where the borrower will not, or is unable to, comply with our environmental and social policies and processes” (Equator Principles, 2013, p. 2). This statement makes it very clear that the EPFIs aim to collaborate with institutional environments and to practice CSR by ensuring that banks grant their major loans to projects complying with sustainable development.

Taken together, the above-mentioned three theories explain why the EPFIs developed the EPs as a sustainability initiative to respond to shareholders, stakeholders, and institutional pressures. Three forms of pressures, namely coercive, normative, and mimetic, are exerted on the EPFIs to integrate sustainable development into the project-financing sector. Coercive pressure is exerted by powerful shareholders within the project-financing sector wishing to incorporate sustainability issues into investment decision-making in order to maximize shareholders’ benefits (Kilbourne, Beckmann, & Thelen, 2002). Normative pressure drives the EPFIs to be more environmentally aware and requires them to understand social perception on environmental issues in order to

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<sup>12</sup> The 2010 UN Global Compact report, the largest study of CEOs on the topic of sustainability, finds that “93% of CEOs believe that sustainability issues will be critical to the future success of their business” (p. 13).

enhance their reputation (Ball & Craig, 2010). Mimetic pressure occurs when the EPFIs imitate the actions of successful competitors, such as the IFC' standards on sustainable development, in the project-financing sector, in order to maintain their legitimacy (Oliver, 1991; Sarkis et al., 2011).

Based on shareholder, stakeholder, and institutional theories, within the project-financing sector, commercial banks responded to the external pressures by creating the EPs, in 2003, to deal positively with financial, social, and institutional aspects of sustainable development. Indeed, the EPFIs responded passively to the external pressures for four reasons: causality, dependency, consistency, and diffusion. First, since the EPFIs predicted conformity with external pressures will cause a higher level of economic, social, and legitimacy fitness, they formulated the EPs as a strategic response of acquiescence to represent their conformity (Oliver, 1991). Second, the EPFIs' dependency on the shareholders, stakeholders, and environmental institutions is high; thus, they acquiesced in the external pressures to achieve the above-mentioned fitness (Mitchell, Agle, & Wood, 1997). Third, the EPFIs were more willing to acquiesce to the expectations of shareholders, stakeholders, and institutional environment when these expectations were consistent with their internal goal of increasing financial revenues (Oliver, 1991). Finally, because positive response to the above-mentioned pressures regarding sustainable development had already diffused voluntarily among the project-financing sector, the EPFIs tended to acquiesce to the external pressures (Oliver, 1991). Figure 8 demonstrates the types of pressures exerted on the banks, and their response of acquiescence to shareholders, stakeholders, and institutional environment.

However, climate change issues create additional challenges that impede sustainable development. The next section, based on the above-mentioned underlying theories, will analyze how climate change issues challenging sustainable development affect the EPFIs' credit, reputation, and legitimacy. Section 4.3 will demonstrate how the above-mentioned theories shape the EPFIs' response to formulating climate change policies and emphasize motivators for the EPFIs to address climate change issues.

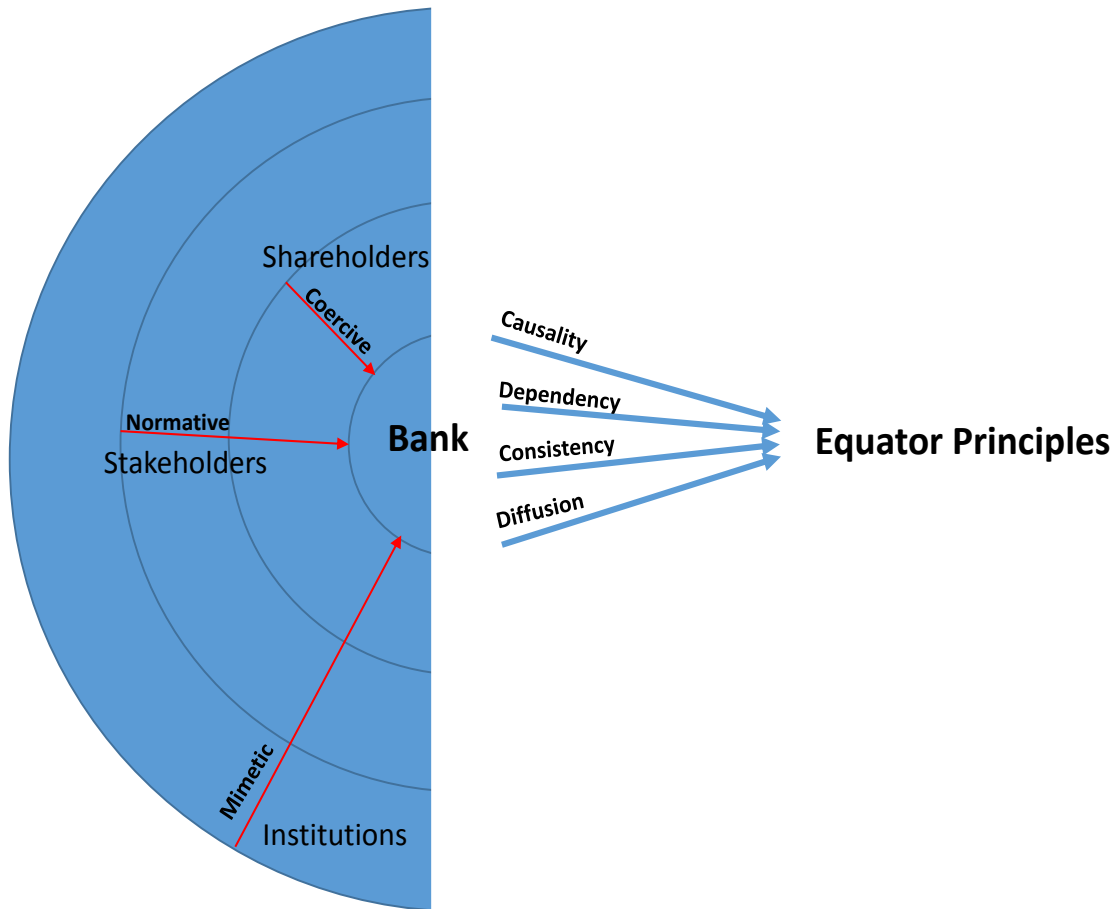


Figure 8: Types of exerted pressures on the banks and their response to the.

### 4.3 Equator Principles and Climate Change Management

IPCC (2007) emphasizes that interaction between climate change and sustainable development:

*“there is a dual relationship between sustainable development and climate change. On the one hand, climate change influences key natural and human living conditions and thereby also the basis for social and economic development, while on the other hand, society’s priorities on sustainable development influence both the GHG emissions that are causing climate change and the vulnerability”.*

According to IPCC, atmospheric GHG concentrations are already causing and will increasingly contribute to changes in climate variability. These changes will have a high

level of social and environmental impacts that impede sustainable development. The long-lasting relationship between sustainable development and climate change emphasizes a need for the regulation of policies that simultaneously address these issues. In this regard, a number of studies, including the Development and Climate project (Halsnæs and Verhagen, 2007) and an OECD development and environment directorate program (Beg et al., 2002), examine the potential of sustainable development-based climate change policies. Scholars believe successfully addressing global climate change needs linking climate change regulation to sustainable development strategies in both developing and industrialized countries (Beg et al., 2002). According to these sources, the implementation of climate change policies that provide the industry with more transparency, longevity, and certainty are critical for addressing climate change and moving towards sustainable development.

In the wake of growing climate change concerns and recent environmental issues, commercial banks have gained unprecedented public attention to regulate climate change policies (Pitchford, 1995, 2001; Boyer and Laffont, 1995, 1997; Heyes, 1996; Balkenborg, 2001; Kroszner and Strahan, 2001). In this context, a report published in early 2014 by Boston Common Asset Management calls on banks to immediately act on climate change impacts and states:

*“Climate change is fundamentally altering the landscape in which banks operate. More than any other industry, the banking industry’s assets are widely distributed across sectors and markets, making it vulnerable to economic and political uncertainty caused by climate change”* (p. 1).

Through their project-financing activities, project financiers play an integral role in financing development projects. Since these projects have relatively long-term spans, the banking sector’s decisions will have lasting impacts on the ability to achieve global GHG reduction targets (Platform, 2007; Rainforest Action Network, 2008). Therefore, these financial institutions could either extensity intensive energy use, or minimizes GHGs (Bragg et al., 1994; Muralidharan et al., 2011). In this regard, “Bank Track believes that with this influential position comes a special responsibility for banks to play a leadership role in addressing the challenges of climate change” (Bank Track, 2009, p. 4). It calls

upon all commercial banks to develop their climate change policies in order to carry out their function in achieving sustainable development. In response, the EPFIs adjust their internal governance procedures to consider climate change management in their lending and investment policies.

### **4.3.1 Motivators for the EPFIs to Manage Climate Change**

The principles of shareholder, stakeholder, and institutional theories shape the EPFIs' strategies to integrate sustainability issues into investment decision-making and hence to address project-associated climate change issues. However, addressing climate change issues increases a project's transaction costs and thereby affects its ability to repay the loan. At first impression, climate change policies would be detrimental to project financiers' goal of increasing shareholder profits. But it is important to identify the motivators that encourage the EPFIs to consider climate change issues. Indeed, the development of climate change policies can provide the EPFIs with a tremendous empowerment potential for managing their credit and reputational risks as well as improving their legitimacy by practicing CSR. The EPFIs emphasize "the adoption of and adherence to the EPs offers significant benefits to us" (Equator Principles, 2013b) through improving banks' reputation and legitimacy, and ensuring project revenue (Macve & Chen, 2010; Wright, 2012). Figure 9, below, depicts the relation between institutional environment, stakeholders, and shareholders pressures on the EPFIs to develop climate change policies in order to manage credit, reputation, and legitimacy risks caused by climate change issues.



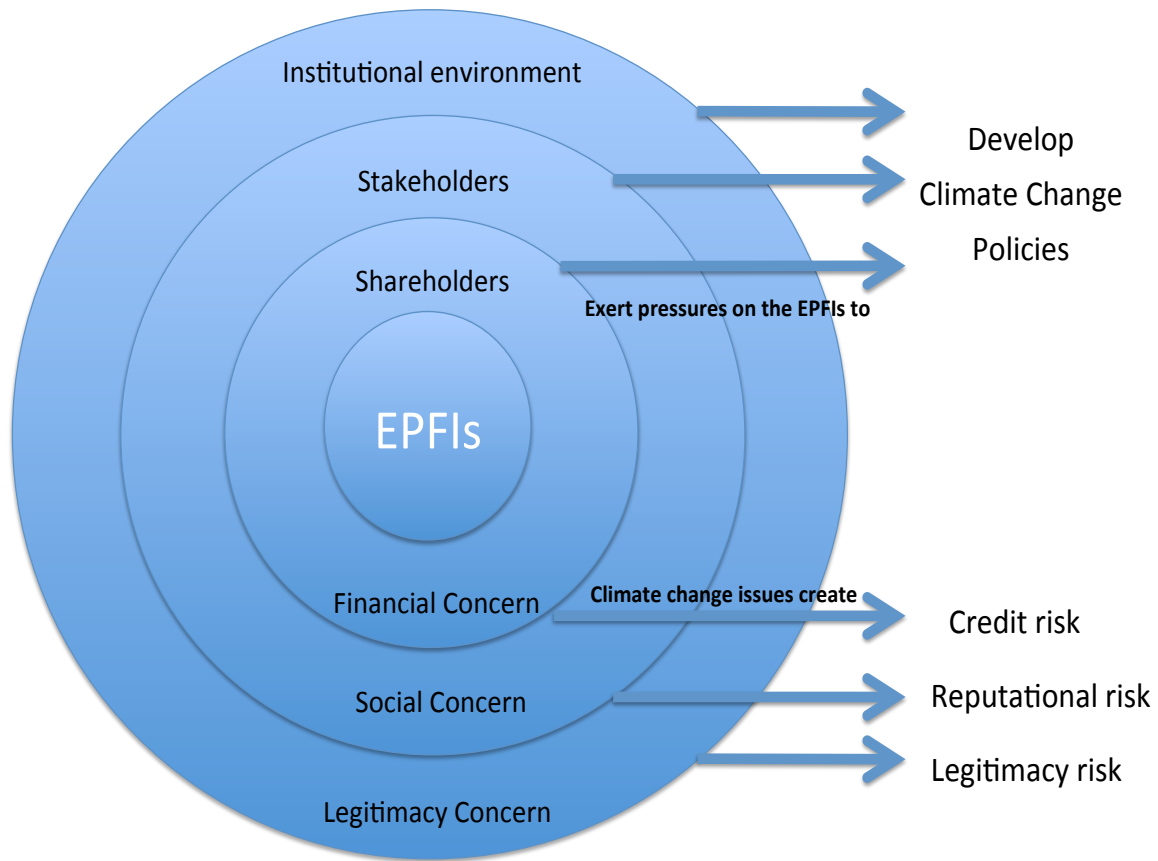


Figure 9: Relationship between pressures and motivators for climate change management.

#### 4.3.1.1 Credit Risk Management

*“Large-scale development projects can greatly affect the natural environment and local communities. As a sound financial institution, it is an important duty to avoid or reduce the risk of causing the value of a loan claim to drop in case a project is interrupted owing to environmental or social problems” Joseph Huang, President of E.Sun Bank.*

One of the main businesses of the commercial banks is the loan business and providing financial support to invest in infrastructure development projects. Financing projects takes the form of large-scale and capital-intensive investment. The construction, operation, or refinancing of these infrastructures are often occurred through project financing or “the creation of a legally independent project company financed with equity from one or more sponsoring firms and nonrecourse debt for the purpose of investing in a

capital asset” (Esty, 2004). In this type of business activities, banks’ revenues come mainly from the operation of the facility instead of the general assets of facilities’ sponsors (Wright & Rwabizambuga, 2006). Scholtens and Dam (2007) emphasizes the point:

*“With project finance, lenders base their credit appraisals on the projected revenues/cash-flows from the operation of the facility—rather than on the general assets or the credit of the sponsor of the facility. Lenders rely on the assets of the facility, including any revenue producing contracts and other cash flow generated by the facility, as collateral for debt. In project financing, the debt terms are not primarily based on the sponsor’s credit support or on the value of the physical assets of the project. Project performance, both technical and economic, is the core of project finance. Usually, at the heart of the project finance transaction is a Special Purpose Vehicle (SPV) that consists of the consortium shareholders, who may be investors or have other interests in the project (such as the originator or contractor)” (p. 1309).*

Therefore, reducing credit risk caused by project operation failure, based on the principles of shareholder theory, is a major concern of banks to ensure stakeholders profit and to guarantee their business success. Among environmental risks, climate change is an increasingly controversial issue imposing a high level of financial pressure on commercial banks. Several studies analyze the adverse impact of climate change risks to the project-financing sector (Dlugolecki & Lafeld, 2005). Climate change can impact asset values and a bank’s financial viability, increase the costs of raw materials, and reduce the demand for a company’s products (Stern, 2006). Debt-repayment capacity can be adversely influenced because of decreasing cash-flow values due to climate change. Equity investments can also be influenced by climate-driven deviations from expected results that affect projected returns on equity and proposed exit strategies (Sullivan, 2014).

For example, the performance of facilities may be decreased due to severe climate conditions, with consequences for reducing project revenue and increasing asset

depreciation rates. Thus, financial models may overestimate the real useful lives and value of physical assets. Faster capital depreciation means that assets need replacing more frequently, negatively affecting projected cash flows. Market conditions, particularly supply and demand, which are a key determinant of future prices, can be sensitive to climate factors. For instance, a change in water supply is likely to increase the price of electricity generation from fossil fuel, nuclear, and hydropower sources. The 2003 European heat wave, which resulted in water shortages, shut down 14 nuclear plants and increased electricity price by 1,300 percent (Stenek et al., 2010, p. v).

In terms of supply chain value, water scarcity is a potential risk that can largely affect a company's production processes (Martinez-Cortina et al., 2010). Building a hydropower facility in an area threatened with water scarcity is not an issue that a bank can afford to ignore. However, a 2010 study from the World Resources Institute showed that 79 percent of the planned electrical generation capacity in India – amounting to 60 gigawatts, much of it relying on water for generation and cooling – will be built in areas that are already water stressed (Mulder, 2015). This study discloses such credit risks imposed by environmental risks like water scarcity are often a governance crisis, not a resource crisis (Rogers, 2006), and in the developing world, such problems are often caused by institutional failure, rather than by technical failure (Castro, 2004).

Banks are responsible to manage their credit risk, ensure shareholders' interests, and avoid reduced cash flows through the evaluation of potential environmental risks upfront. This enables lenders to protect themselves against environmental risks raising repayment losses and to recognize the credit risk relations of the different corporate environmental activities before decision making (Bauer & Hann, 2010). Therefore, it is incumbent upon lenders to consider the environmental implications of their lending, and hence, strive to assess and mitigate those impacts prior to lending. In so doing, the Equator banks should be guided by a range of well-regulated environmental initiatives, the EPs, to assess and manage project-related climate change impacts throughout the life of projects. Doing so can provide lenders and borrowers with more exact information on the project impact. For instance, Citigroup contends that “these processes [EPs] increased the company's knowledge regarding the foreseeable environmental risk of these projects”. It claims that

adopting the EPs has provided financial benefits through an enhancement of risk management policies. Hardenbrook (2007) also states that “compliance with the Equator Principles has the potential to bring about an enhanced position in the marketplace by protecting the future of an EPFI’s investments” (P. 15). Chris Beale, Head of Project Finance at Citigroup, emphasizes: “If sponsors adopt and follow EP for sensitive projects, they might well enjoy a faster implementation period, with the end result being that the project starts generating revenue streams earlier, avoiding the specter of costly interruptions, delays and retrenchments” (Glasgow, 2003). The EPs clearly make it less likely that the EPFIs find themselves in trouble in the future and “lead to more secure investments on the part of customers and safer loans on the part of banks” (Glasgow, 2003). Therefore, these types of regulations are a significant step towards credit risk management not only through making a global contribution to alleviating environmental issues, but also through assuring project revenues.

Given the importance of environmental issues in creating credit risk, an inadequate management of these issues can also affect banks’ reputations, and consequently, weaken the value of their investments (Amalric, 2005). In addition to creating financial risks for banks, financing GHG-intensive projects can undermine a bank’s reputation with NGOs and other stakeholders. Banks that engage in environmental misconduct will incur costly consequences and evoke strong negative reactions from stakeholders against their reputation, all of which affect default risk and thus impair their income securities (Stern, 2006). Therefore, reputational risk management is another motivator driving banks to consider the environmental impacts of their lending and comply with the EPs.

#### **4.2.2.2 Reputation Risk Management**

*“The Equator Principles makes sound business sense for the banks involved. Implementation of EP can have benefits derived from enhancing business reputation” Chris Beale, Citigroup's Global Head of Project Finance.*

Within the financial sector, banking operations are often dependent on trust (Fombrun et al, 2000), which is a prerequisite and a consequence of relationships between banks and customers (Scott, 2008). In areas where the transactions are based on trust, reputation

also becomes important in the fulfillment of future promises (Gaultier-Gaillard & Louisot, 2006). As a result and in light of the principles of stakeholder theory within the financial sector, reputation is a crucial mechanism for banking-system functioning and is often claimed as one of the most valuable assets for financial institutions (Stansfield, 2006).

Good reputation is an indicator of the socially-responsible behaviors of banks in relation to the expectations of stakeholders (Deephouse, 2000; Fombrun et al., 2000). It has potential to attract more customers, and consequently, raise revenues (Miles & Covin, 2000). On the other hand, the direct influence of reputation on financial performance has also illuminated that a negative reputation can significantly reduce financial profits (Jones et al., 1999). Reputational risk is relatively detrimental for banks since the nature of financial activities requires maintaining the confidence of all stakeholders (Fombrun et al., 2000; Waygood, 2006). Similar to credit risks, within the project-financing sector, reputational risk reflects the management failures of banks to fulfill stakeholders' needs (Waygood, 2006).

Despite the importance of reputation, the irresponsible behavior of several banks in managing the climate change impacts of lending activities has resulted in reputational risks (Trotta et al., 2011). In the context of climate change, reputational risk can be defined as the risk resulting from customers' perceptions of investors' action on climate issues. Reputational risks will increase when involved stakeholders believe that an institution has failed to meet their expectations regarding project return and environmental protection. Along with the evidence about potential climate change impacts on project viability, stakeholders expect financial institutions to incorporate potential environmental risk into their decision-making. Therefore, climate change issues can affect banks' reputation in two ways:

- 1) Banks fail to achieve expected returns of project financing due to severe climatic conditions, and
- 2) Banks finance GHG-intensive projects.

Regarding the first type of reputational risk, the previous section discusses how failure to consider climate change issues can affect projected outcomes. Increasing awareness of financial loss associated with climate change as well as banks' role in financing GHG-intensive projects intensifies stakeholders' scrutiny of the investment sector and adversely affects banks reputation. For example, investing in a new project that is heavily dependent on water resources, in a water-stressed region, may face additional scrutiny. Thus, if sponsors and investors cannot demonstrate that the project will not influence the region's water supply, or for that matter future water availability for the investment's adequate performance, their reputation might be affected. Even if the impacts occur only after the investors have withdrawn from the project, their reputation may be affected if there was sufficient information about potential risks, which were not addressed during the investment (Stenek et al., 2010, p. V).

According to the second risk, banks' reputations are largely susceptible to financing environmentally risky projects (Stern, 2006; Waygood, 2006), because NGO pressure against such activities will launch social campaigns that target the banks' reputation, and ultimately, can affect their profits (Macve & Chen, 2010). Project-related climate change impacts and financing GHG-intensive infrastructure projects are types of management failure fueling NGO criticism and social pressure exposing banks to reputational risks (Amalric, 2005).

Indeed, banks face high levels of public and NGO scrutiny on climate issues, and a bank's carefully cultivated "green" image can be jeopardized by revelations about environmentally damaging lending and financing deals. For example, in 2000, the Rainforest Action Network criticized the Citigroup for investing in projects, such as the Chad-Cameroon pipeline, the Oleoducto de Crudos Pesados pipeline, and the Camisea gas fields in Peru, because of ecological damages and displacement of local communities. Meanwhile, German NGOs and parliamentarians criticized West Deutsche Landesbank, the quasi-public German bank, for arranging the highly controversial pipeline, particularly since the indigenous peoples were initially not given land as compensation for being displaced from their native lands. The reputation of Barclays Bank was tarnished by its financial involvement with the large-scale Indonesia forestry projects of

Asia Pulp and Paper, the conglomerate that collapsed in 2001 (Biermann et al., 2009).

Accordingly, recent analyses of banks' reputations are mainly focused on considering reputation as a competitive advantage that must be preserved and developed in order to create economic values. Barclays, which is an Equator bank, states that "managing reputation risk successfully will help us and the industry avoid giving cause to further change in regulation". Therefore, companies seek to improve their capabilities for managing reputational risk by investing in crisis management and scenario planning strategies. On this point, successful banks are those that emphasize the importance of reputation through the compliance with reputational risk-management programs (Xifra & Ordeix, 2009). Bartley (2007) indicates that the institution of voluntary environmental regulation among commercial banks is an attempt "to preserve their reputations and maintain market positions in the face of globalizing markets and "naming and shaming" campaigns waged by activists" (p. 2). Adopting well-established public/external climate change policies can provide a great opportunity for banks to include socio-environmental concerns within banks' business frameworks and enhance their reputations (Equator Principles, 2006; Macve & Chen, 2010; Nguyen, 2007; O'Sullivan & O'Dwyer, 2009).

Besides the influence of credit and reputational risk management that effectively motivate banks to consider climate change due diligence, ethical expectations affecting banks legitimacy require them to integrate institutional interests into their corporate practices (Wright & Rwabizambuga, 2006). After a series of corporate governance scandals that invited greater regulatory scrutiny, the institutional environment needs banks to demonstrate their socio-environmental awareness and bring business ethics to the center of their policies. Thus, banks seek to demonstrate their ethical credentials and maintain their legitimacy by practicing CSR. Scholars state that the implementation of CSR, focusing on wealth and jobs and promoting sustainable development, is an effective way for banks to consider ethical issues and gain more positive reputation (Lin et al., 2009). Therefore, within the project finance sector, CSR is seen as a corporate vehicle for banks to contribute to sustainable development, practice ethical behavior, manage credit risks, enhance their reputations, and make profits (Moon, 2007; Carroll, 1999).

#### 4.2.2.3 CSR Management (Legitimacy)

*“Sustainability is a widely discussed topic among corporations and is also a commitment that a company makes in its pursuit of corporate social responsibility (CSR). The underlying connotation of corporate sustainability encourages corporations to embrace environmental, social, and governance issues as a strategic tool to modify corporate management system and operation model while seeking profits,” stated by Tsu-Pei Chen, Chairman of CUB.*

Corporate Social Responsibility (CSR) is a way by which organizations transparently consider social, environmental, and economic priorities into their strategies to enhance their legitimacy (Classon and Dahlström, 2006). CSR emphasizes environmental and social stewardship and states that banks have a duty to be good citizens and to do the right thing (Porter & Kramer, 2006). Primarily motivated by institutional pressure, CSR aims at going beyond financial and reputational concerns to strengthen ethics in the banking business (Yeung, 2011; Sarker, 2014; Hoffman & Ventresca, 2002; Saha & Darnton, 2005). According to Edelman (2007)<sup>13</sup>, since businesses play a crucial role in wealth creation and in the sustainable usage of natural capital, practicing CSR must be their central management concern. The implementation of CSR helps financial institutions to do right things, and hence proactively manage their risks and take advantage of opportunities by addressing ethical concerns (Thien, 2013).

Developing industry-wide codes of conduct, defined as “written statements of principle or policy intended to serve as the expression of a commitment to a particular enterprise conduct”, is a way for banks to declare their intention to implement CSR (Diller, 1999, p. 102). These codes create high-level normative standards in business practices (Keay, 2002; Lenox & Nash, 2003). The EPs are a voluntary code of conduct declaring the positive environmental behavior of the EPFIs, and banks adopted the EPs may have a greater CSR than financial institutions that are not a member of the EP (Scholtens & Dam

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<sup>13</sup> The 2007 Edelman “Trust Barometer” notes that a majority of participants in North America (71%) and Asia (72 per cent) believe international business have a key role in addressing socio-environmental issues. 57% in the European Union and 63 % in Latin America have similar thoughts.



2007). But the EPs lack climate change consideration that influences the EPFIs legitimacy because of inappropriate behavior towards climate change management. Within the project-financing sector, institutional expectations move towards addressing climate change issues<sup>14</sup>, and the EPFIs also need a signaling device for presenting their climate change credentials, with the aim of practicing CSR and improving organizational legitimacy. Indeed, climate change policies can promote environmental stewardship within the EPFIs and attain their legitimacy by undertaking climate change due diligence during project financing (Equator Principles, 2013b).

In conclusion to Section 4.3, shareholder, stakeholder, and institutional theories reflecting the importance of sustainable development shape the EPFIs' strategies to address climate change issues within the project-financing sector. The EPFIs were motivated to consider climate change issues, which significantly impede sustainable development, in order to maximize shareholders' benefits, enhance their reputation, and attain legitimacy. To this end, the above-mentioned motivators justified by the three theories that promote the EPFIs climate change management decision-making and instigate the EPFIs to regulate climate change policies. The EPs' climate change policies seek to increase revenues by investing in resilient projects, protect reputation by assuring stakeholders that the EPFIs consider climate change impact of their project financing, and attain legitimacy by practicing CSR. The descriptive analysis conducted in this section helps me to understand principles and objectives supposed to be achieved by the EPs' climate change policies. It then enables me to assess the likely effectiveness of these policies by evaluating the extent to which the policies can fulfill above-mentioned principles and goals.

### **4.3 Environmental Impact Assessment and Climate Change**

The increasing awareness of the global dimensions of climate change hindering sustainable development and affecting the EPFIs' credit, reputation, and legitimacy has stimulated interest in pursuing climate change management within the project-financing sector (Beg et al., 2002). In doing so, the EPFIs apply EIA as a strategic response of

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<sup>14</sup> The European-based Institutional Investors Group on Climate Change (IIGCC), the North American-based Investor Network on Climate Risk (INCR), and the Investor Group on Climate Change Australia/New Zealand (IGCC), and the United Nations Environment Programme Finance Initiative (UNEP FI) are among groups concerned about climate change within the investment sector.

acquiescence to represent their conformity with the pressures of shareholders, stakeholders, and institutional environment to consider climate change issues during projects design, construction, operation, and decommissioning phases (Agrawala et al., 2012). EIA is considered as a method for incorporating financial, social, and ethical concerns into decision-making process, and is increasingly being positioned within a broader context of sustainability (Glasson et al., 2005). The idea that underpins theoretical accounts of EIA is that information-rich, open and participatory approaches will lead to decisions facilitating sustainable development (Craik, 2008; Holder, 2006).

Indeed, EIA is a procedural framework that can benefit the EPFIs in four ways: causality, dependency, consistency, and diffusion (see pages 10 and 11). Firstly, the EIA process can promote financial, social, and legitimacy fitness, because laws and policies supporting EIA are mainly focused on managing project-related environmental issues. Secondly, this process enables the EPFIs to manage their dependency on shareholders, stakeholders, and institutional environment. Thirdly, through the implementation of EIA, the EPFIs can simultaneously acquiesce to the demands of shareholders, stakeholders, and institutional environment consistent with the EPFIs' goal by applying mitigation and adaptation strategies. Fourthly, the implementation of EIA has been already diffused voluntarily among financial institutions like the World Bank and IFC; thus the EPFIs tend to implement EIA during their project financing instead of developing a completely new process.

The EPFIs implement EIA to manage credit, reputation, and legitimacy risks caused by financing environmentally risky projects. The EIA process suggested in the EPs is supposed to minimize climate change-related financial risks. First, the screening, scoping, and monitoring stages can decrease the vulnerability of projects by assessing and managing climate change impacts on projects. Through conducting climate change adaptation measures, EIA can maximize shareholders' interests by investing in climate-resilient infrastructure projects. Second, EIA has become increasingly accepted by the EPFIs as a tool by which they can go beyond a simple interest of economic viability and consider stakeholders' priorities. The EIA process can also protect the EPFIs' reputations as it "is internationally recognized as a key tool to guide us on a path to sustainable

development through the participation of involved stakeholders” (Weaver et al., 2008, p. 2). Glasson, Therivel, & Chadwick (2005) also emphasize this point by declaring that “the EIA process has the potential to be a basis for negotiation between the developers, public interest groups, and the planning regulator. This can lead to an outcome that balances the interest of the development action and the environment” (p. 8). EIAs, in effect, require proponents to engage affected persons in all stage of EIA and can therefore be viewed as a mechanism to enhance accountability through deliberative practices. That means EIA is a vehicle for public involvement and encourages dialogue between the EPFIs and stakeholders in order to consider the interests of all stakeholders by mitigating project-associated climate change impacts (Holder, 2006). Third, although the EIA process does not impose particular environmental outcomes, its decisions will be legitimate (Craik et al., 2012). Through comprehensive assessment and consultation, the EPFIs will be empowered to gain legitimacy by complying with the EIA’s legitimate outcomes (Craik, 2006). CSR/legitimacy criterion is mainly about operating in a transparent way and be accountable to the public. All stage of the EIA process are supposed to be conducted through meaningful consultation and final decisions should be publically disclosed (Wood, 2003). The EIA process, therefore, can increase the EPFIs’ legitimacy because it establishes a much more transparent assessment process with specific time-frames and upfront certainty.

### **4.3.1 Origin and Purposes of EIA**

Large-scale development activities in western countries had raised public concerns about significant loss of natural resources. In the early 60s, it was increasingly recognized that development projects significantly affect the environment and society, and hence have to go beyond the sole objective of economic growth and include environmental responsibility too. The US was the first country to respond to these development issues, and in 1970, it established National Environmental Policy Act (NEPA) in order to consider the goal of environmental protection. One of the goals of NEPA is “to promote efforts which will prevent or eliminate damage to the environment and biosphere” (p. 3). NEPA’s environmental protection goal has been strengthened by the concept of sustainable development, highlighting the importance of environmental quality. It, therefore, emphasizes the need for a continuing policy “to create and maintain conditions

under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans” (NEPA, 1969). NEPA intends to “fulfil the responsibilities of each generation as trustee of the environment for succeeding generations” (Section 101(b)) and requires that “all agencies of the Federal Government shall ... include in every recommendation for major Federal actions significantly affecting the quality of the human environment, a detailed statement on ... the environmental impact of the proposed action” (Section 102(2)(c)).

NEPA enacted legislation on EIA and introduced the requirements and procedures of EIA to address the environmental challenges of economic growth (O’Riordan, 1991) through communicating project’s likely environmental impacts to decision-makers and the public (Morgan, 1998). The surge of environmental concern that lay behind the enactment of NEPA also had wider international ramifications, ultimately leading to the United Nations Conference on the Environment in Stockholm in 1972. This conference considered the problems of burgeoning development, pollution, and destruction of the natural environment as universal issues. Consequently, the EIA approach of rigorous project-by-project evaluation of significant impacts was seized upon as a means to resolve these environmental problems by many jurisdictions, which saw EIA as a key response to the increasingly large-scale environmental harm being witnessed. After more than 40 years of practice and development, EIA has been widely accepted in numerous countries (Holder, McGillivray, & others, 2007) as a legally required tool dealing with the issue of sustainable development (Goode & Johnstone, 1988; Rees, 1988; Sadler & Weaver, 1999).

EIA is defined as “[t]he process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made” (Senécal et al., 1999, p. 2). It aims to facilitate sustainable development by predicting environmental impacts at early stages in projects, finding ways and means to reduce adverse impacts, shaping projects to suit the environment, and providing aids to decision-making towards positive environmental practices. Indeed, EIA “impose[s] on decision makers specific obligations to study the environmental consequences of a proposed activity, disclose the predicted impacts to the

public, and consult those potentially affected” (Craik et al., 2012, p. 1). It seeks “to encourage the consideration of the environment in planning and decision making and to ultimately arrive at actions which are more environmentally compatible” (Canter, 1996, p. 2).

To benefit from EIA, first requires a discussion of what is the EIA process and how it should be carried out. Every EIA process is set within local contexts and circumstances that may vary from country to country. The legal system under which EIA has been regulated plays an important role in shaping its process. However, EIA’s integral principles and steps, including screening, scoping, decision-making, and reporting, are widely agreed among most of EIA systems (Petts, 1999). The following section briefly describes the general processes and goals of the three stages. Based on these descriptions, Chapter 6 analyzes the incorporation of climate change into the EIA process.

### **4.3.2 General Processes of EIA**

Screening, scoping, decision making, and reporting comprise integral stages of the EIA process, and are of great importance, as they guide and directly affect the entire quality of project assessment (Jones, 1999). The preliminary stages of EIA aim to:

*“ensure that environmental considerations are explicitly addressed and incorporated into the development decision making process; to anticipate and avoid, minimize or offset the adverse significant biophysical, social and other relevant effects of development proposals; and to promote development that is sustainable and optimizes resource use and management opportunities” (IAIA, 1999, p. 2).*

Figure 10 depicts the EIA process that will be elaborated in the following sections. These stages should be considered early in a project’s life cycle to provide a focused presentation of environmental impacts (Canter, 1996; Weaver et al., 2008; Wood, 2003).

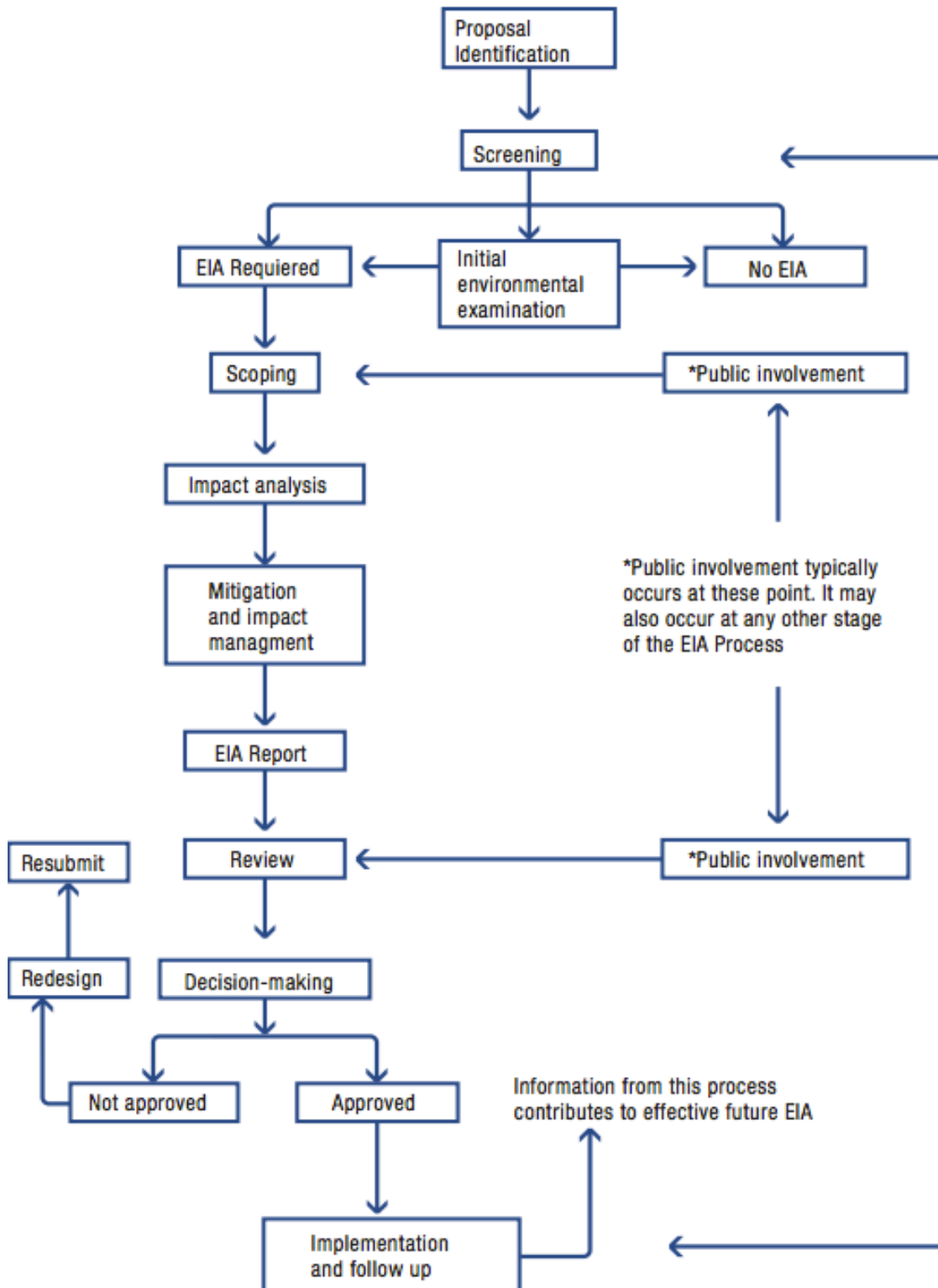


Figure 10: General process of EIA (Environmental Impact Assessment Course Module, 2006)

#### ***4.3.2.1 Screening; is EIA needed?***

The screening process is a preliminary determination of whether to conduct EIA at all and qualitatively analyzes project-associated impacts. In order to focus assessment procedures on key issues, the screening mechanism seeks to ensure that only projects with significant adverse environmental impacts are considered under further assessment. “The determination of whether or not an EIA report is to be prepared for a particular action normally hinges upon the question of the significance of its environmental impacts” (Wood, 2003, p. 140). In screening, “evaluating the significance of environmental effects is perhaps the most critical component of impact analysis” (Sadler, 1996, p. 118). The types of projects identified to be scrutinized under the EIA system are those that substantially affect the environment, consequently, projects with no or minimal environmental impacts will be screened out (Petts, 1999). Doing so enables the EPFIs to identify potential projects’ impacts on the environment and projects vulnerability to severe climatic conditions, and then help the EPFIs minimize credit and reputation risks caused by these impacts. There are two main approaches to the establishment of significance during the screening stage: objective approach i.e., list and criteria, and subjective approach i.e., discretionary determination. Whichever approach is adopted, it is clearly important that, if screening is to be operated effectively, the proponent should be required to submit information to assist decision-makers in determining whether EIA is necessary for any particular project (Wood, 2003). Section 5.2.1 will discuss the screening stage in the context of climate change issues, and Section 6.2.1 will analyze the EPs’ process for project screening.

#### ***4.3.2.2 Scoping; which impacts and issues to consider?***

Following the affirmative decisions made in the screening step, the scoping stage “should aim to set clear boundaries...to the assessment so that all participants are able to focus time and resources on the important issues” (Petts, 1999, p. 202). “Scoping, which is usually initiated after the decision to undertake a full EIA has been taken, is part of the assessment process” (Wood, 2003, p. 160). Scoping decisions frequently hinge on the issue of significance but in further detail. “The objective of scoping is to identify the significant issues associated with proposed action and thus to determine the issues to be addressed in the EIA report” (Wood, 2003, p. 159). Since EIA’s purpose is not to carry

out exhaustive studies on all environmental impacts for all projects, scoping seeks to assess the most important issues, eliminate irrelevant impacts, and ensure that indirect and consequential effects are not overlooked (Glasson et al., 2005). The significance of project-associated environmental impacts can be determined based on specified thresholds below which the impacts are insignificant. “Alternatives can [also] be used to identify a project's relative significance. Alternatives provide a comparison from which decision-makers can determine whether a proposed project has the least significant environmental effects” (Kruger, 2009, p. 18). Alternatives are different designs and methods through which “project developers can meet the project’s objectives by carrying out a different type of action, choosing a different location or adopting a different technology or design for the project” (European Commission, 2013, p. 35). Considering alternative analysis guarantees that EIA is not limited to the defense of a single project proposal that the proponents are desired to implement. Doing so gives decision-makers further information allowing them to identify better ways of doing the project with a less impactful outcome. The consideration of alternatives is a significant step towards transparency in the EIA process and a desire to identify all feasible options in an objective manner, with a view to facilitating balanced decision-making process and sustainable development.

Following the significance assessment, EIA practitioners should prepare “reports documenting the findings relating to the predicted impacts of the proposal upon the environment” (Wood, 2003, p. 176). Canter (1996) notes that the EIA report is perhaps the most important activity in EIA and includes the identification of significant issues, the explanation of why other issues are not significant, and the mitigation measures, the project's purpose, the alternative means of carrying out the project, the need for a follow-up program should be demonstrated in the EIA report (Wood, 2003). The steps required during scoping will help the EPFIs to not only reduce credit and reputation risks but also enhance their legitimacy. Section 5.2.2 and its subsidiaries will explain in detail the requirements for Scoping project-associated GHG emissions, and Section 6.2.2 will examine how the EPs’ regulation for GHG threshold and alternative analysis.



#### *4.3.2.3 Decision-making; how can EIA be integrated into final projects?*

The final decision about whether or not to allow the proposal to proceed is always taken in the public domain (Wood, 2003). Thus it is important to see EIA as a tool to aid decision-making between authorization and refusal of projects through public consultation. EIA is originally intended to give greater weight to environmental consideration in decisions and the decision-making process should reflect the result of the EIA report. Indeed, decision-making will be tested based on the criterion of whether the findings of the EIA report are a central determinant of the decision on the action. Although EIA aims “to facilitate sound, integrated decision making in which environmental considerations are explicitly included” (Sadler, 1996, p. 13), the decision is usually dependent not only upon the environmental merit of the proposal but also on political circumstances. It is apparent that the environmental impacts of the proposal will usually be only one of the factors to be considered by the decision-makers. “EA, while requiring decision makers to consider projects in light of substantive environmental criteria, remains principally process oriented and does not impose particular environmental outcomes” (Craik et al., 2012, p. 1). Thus EIA does not require that decisions must prevent significant environmental impacts and need decision-makers assess project-related potential environmental impacts and justify their decisions according to the EIA report.

In deed, EIA ascertains that making the result of project assessment public can place some pressures on decision makers to incorporate those results of assessment into their decisions. Based on the stakeholder theory, EIA can facilitate stakeholders’ pressures by giving them information in which they hold a company to account. Therefore, if decision-making is to reflect the EIA process meaningfully, the proponent should give stakeholders opportunity to comment on the quality of EIA report and participate in decision-making. “For the decision on the proposal to be seen to be fair it is obviously preferable that it should, in general, be made by a body other than the proponent” (Wood, 2003, p. 223). Sections 5.2.3 and 6.2.3 will identify requirements for decision-making in the context of climate change issues and explain how the EPs needs the EPFIs to make decisions about project-related GHG emissions, respectively.

#### ***4.3.2.4 Monitoring; how can the implementation of EIA be monitored?***

“Monitoring includes ensuring that the terms and conditions of project approval are met, verifying environmental compliance and performance, and indication where the adjustment of mitigation and management plans may be necessary” (Wood, 2003, p. 240). In practice, the requirements of the EIA report should be used during construction and operation of the project. But since the EIA report is a record forecasting the impacts of proposed projects as it is designed at a particular point in time, a new design will be needed once the project has been approved and the EIA report may lead to modifications. Moreover, since even the best design may need to be altered to meet unexpected problems encountered during construction, further modifications may well take place during the construction of the project. Therefore, the implemented action may differ from that envisaged when the EIA report was prepared. In addition, if the proponent’s intentions fall short of full incorporation of the mitigation measures proposed in the EIA report, a significant implementation gap may occur. Therefore, implementation and impact monitoring ensure that this gap will be minimized. The underlying assumption of the monitoring system is that the EPFIs can apply EIA more effectively to manage their credit and reputation risks by providing “a stronger regulatory backing. Perhaps the most explicit connection between EIA aims and the EIA process has been made in relation to its post-decision stages; it is precisely the limited degree of leverage being exerted by EIA that has provoked suggestions to include better measures for the follow-up of actions after they have been approved” (Jay et al., 2007, p. 9). Section 5.2.4 will determine the importance of monitoring from climate change mitigation and adaptation perspectives, and Section 6.2.4 will discuss the EPs’ requirements for project monitoring.

#### **4.3.3 Climate Change and EIA**

To make progress towards combating climate change, it is vital to fully integrate these issues into EIA. According to the definition of the environment in Environmental Protection Law (1989), incorporating climate change issues in EIA is commensurate with the EIA’s original purpose of managing adverse environmental impacts (He, 2014). Thus Christopher (2007) states that:

*“EIA has the strong potential to be a useful tool in addressing climate change ... [and] it ensures that other governmental efforts that address*

*existing GHG emissions will not be unraveled by forthcoming (and inevitable) economic development and population growth ... In so doing, EIA can serve as an important link between international standards and local decisions” (p. 537).*

EIA helps decision-makers to enhance their environmental considerations to integrate climate change impacts within the EIA process (Marks, 2010). The flexibility, openness, scientific validity, and practicability of EIA make it an adequate management strategy to incorporate climate change into project assessment. “From an implementation perspective, it may, therefore, be potentially more efficient and effective to broaden the scope of existing EIA to include climate change mitigation and adaptation considerations, instead of establishing and implementing parallel procedures for screening projects for climate change risks” (Agrawala et al, 2012 p. 9). As such, including climate change issues in EIA does not propose to establish a new EIA process but rather to incorporate more steps into the existing EIA procedures.

Through incorporating climate change issues into EIA, the EPFIs intend to address climate change issues along with fulfilling the concerns of credit and reputational risks management and practicing CSR. This intention highlights the importance of climate change adaptation and mitigation strategies in all stages of the EIA process. The following sections discuss mitigation and adaptation strategies and explain main challenges influencing these strategies.

#### ***4.3.3.1 Approaches for climate change management through EIA***

Many infrastructure projects considered under EIA scrutiny are long term; thus, it is integral to assess how climate change issues will influence affect and how projects will influence the environment. A complementary approach to address climate change issues should examine the feasibility of incorporating climate change mitigation and adaptation concerns within the construction, operation, and decommissioning phases of the project. For example, a transportation project may consider GHG mitigation by assessing associated GHGs, while a water-supply project may focus on the importance of climate change adaptation by considering climate change impact on relevant water resources.

EIA is particularly relevant in both contexts and involves assessing the adverse environmental impacts of a project and its vulnerability to climate change risks. Therefore, there should be two practical approaches for addressing climate change through EIA: (1) GHG considerations (i.e., mitigation of climate change), where a proposed project may contribute to GHG emissions, and (2) impact considerations (i.e., adaptation to climate change), where climate change may affect a proposed project.

#### **4.3.3.1.1 climate change mitigation**

Climate change mitigation is defined as “an anthropogenic intervention to reduce the sources or enhance the sinks of greenhouse gases” (IPCC, 2007). Climate change mitigation, which is a fundamental response to climate risks, refers to the process of reducing GHG emissions associated with project financing (Larsen, 2014). The goal of mitigation is to prevent adverse human interference with the climate system, and “stabilize greenhouse gas levels in a timeframe sufficient to allow ecosystems to adapt naturally to climate change, ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner” (IPCC, 2014a, p. 4).

Mitigation measures should be identified during the preliminary stages of EIA in order to reduce the flow of GHGs into the atmosphere by reducing sources of these gases (IEMA, 2010b). It will influence the construction, operation, and decommissioning phases of projects to optimize energy performance and limit their likely contribution to GHG emissions. At first, EIA seeks to avoid project-associated GHG emissions; but if GHG emissions cannot be avoided, measures for GHGs reduction have to be implemented during all phases (IPCC, 2014a). Following the reduction measures, compensation approaches should be taken for unavoidable GHG emissions (Bogner et al., 2008).

#### **4.3.3.1.2 climate change adaptation**

Climate change adaptation encompasses “adjustments in natural or human systems in response to actual or expected climatic stimuli on their effects, which moderates harm or exploits beneficial opportunities” (IPCC, 2007). It is intended to reduce the vulnerability of a project against actual or expected climate change risks, and to describe how to cope with the consequences of climate change. The consideration of climate change impacts on a project is a component of EIA seeking to address environmental consequences (e.g.,

economic losses) imposed on development projects. Development projects generate different environmental impacts such as climate change, and they can also be affected by such impacts. For instance, “a port terminal located in the Caribbean was destroyed, not once, but twice, in 1999 and in 2000, by extreme weather events. If the possibility of extreme weather events had been taken into account during the planning process, the terminal could have been built to specifications which could have withstood the rough conditions, saving millions of dollars” (DCDAP, 2005, p. 11). The above example illustrates the linkage between climate change adaptation and development. The World Bank (2009a) emphasizes that climate change impacts on project need to be considered in all development cooperation efforts to guarantee resilient development activities.

Therefore, adaptation strategies should be recognized during the primary stages in order to decrease project vulnerability to climate change impacts. It can enable proponents in implementing best practices that adapt to possible climate change impacts. Consideration of climate change adaptation in the EIA process maximizes the benefits of proposed activities, through protecting them from climate change effects and facilitating sustainable development (IEMA, 2010a). Therefore, incorporating climate change adaptation into EIA is a significant way to protect the project from risks imposed by climate change and increase project resilience to climate change impacts (Agrawala, et al., 2012).

Consequently, mitigation and adaptation approaches will:

- “Help proponents manage or reduce the potential risk posed by the impacts of climate change to their projects and contribute to climate change action;
- Provide assurance to the public that climate change implications are being appropriately considered in the assessment of proposed projects;
- Provide environmental managers with information that will assist their broader climate change action; and
- Help decision makers to address climate change implications in a risk management context” (Government of Canada, 2003, p. 4).

#### ***4.3.3.2 Challenges for climate change management through EIA***

Climate change mitigation and adaptation throughout the EIA system is a controversial procedure (IAIA, 2013). According to the best practice policies analyzed in this study, such as European Commission Guidance on integrating Climate Change and Biodiversity into Environmental Impact Assessment (2013), Canadian General Guidance for Practitioners (2003), and World Bank Group Development and Climate Change (2008), there are two main challenges, namely cumulative impact and uncertainty, that may hinder EIA from implementing mitigation and adaptation strategies. For example, to address climate change mitigation, EIA face challenges to consider cumulative impacts of GHGs on climate change and to evaluate the significance of associated GHGs (Kruger, 2009). Moreover, to implement climate change adaptation strategies, EIA practitioners may suffer scientific uncertainty “that [means] human systems cannot predict and be thoroughly prepared for climate change due to imperfect knowledge about the probability, magnitude, timing and location of climate change impacts” (He, 2014, p. 54). Therefore, although EIA plays a crucial role in addressing environmental issues, cumulative impact and uncertainty are most likely to pose significant difficulties to project assessment. Exploring these characteristics will cast light on the path towards identifying the EPs’ challenges for addressing climate change.

##### **4.3.3.2.1 Cumulative impact**

Cumulative emissions are responsible for the increasing atmospheric GHG concentrations and consequently for climate change impacts. Under NEPA, cumulative impact is defined as:

*“The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR 1508.7).*

In the context of climate change issues, an individual project's GHG emissions are insignificant, while cumulative effects from GHG emissions worldwide are immense. The primary challenge for EIA is the meaning of "significant" in the context of GHG

emissions (Kruger, 2009). Despite most associated environmental effects, the contribution of a single project's GHGs to climate change cannot be certainly measured. Considering such cumulative and long-term impacts is a unique challenge of climate change management for climate change mitigation measures through the scoping stage. The EIA report, which should be prepared during scoping, is required to contain a discussion of the significance of the project's environmental effects, including any cumulative effects caused by the project.

Since cumulative impact of project-associated GHGs can change climate baseline, which means the design and operational management of a project in a certain climate scenario may no longer be relevant in future, EIA should avoid a snapshot analysis of a single point in time and should consider climate change trend with and without the proposed project (European Commission, 2013). However, to understand associated cumulative effects, EIA does not need to be comprehensive, but should understand which cumulative effects might be most significant. In this regard, the NEPA guidance on greenhouse gases states "it is not currently useful ... to attempt to link specific climatological changes, or the environmental impacts thereof, to the particular project to emissions, as such direct linkage is difficult to isolate and to understand". Therefore, EIA should focus on "significant impacts and at the same time deal with issues that are helpful for solving problems or making improvements to projects" (Larsen, 2014, p. 2).

Climate change studies state "the apparent difficulty presented by the term significant is not debilitating. When the cumulative effects of one project's GHG emissions are examined, it is possible to articulate the meaning of significance in the climate change context" (Kruger, 2009, p. 24). Therefore, the clearest articulation of significance could be achieved through:

- First, the establishment of regulatory thresholds. Establishing thresholds permits the technical foundation of significance to be validated through a public review process with a concomitant consideration for normative context. EIA practitioners should assess impacts based on the policies of the relevant jurisdictions if they suggest a particulate threshold of GHGs. This would enable project developers to

assess the likely significance of an individual project (CEAA, 2003). See Section 5.2.2.3; and

- Second, when applicable policies lack suggested threshold potential litigants might be successful in reducing a proposed project's adverse environmental impacts by demanding a more robust evaluation of alternatives in the courts. The EIA practitioners should consider alternative analysis to select less GHG-intensive approaches or design to projects (Kruger, 2009). See Section 5.2.2.5.

#### **4.3.3.2.2 Uncertainty**

EIA is introduced as a tool for reducing environmental implications of decision-making. It is based on the idea that with more information and systematic analysis, better decisions could be made (Arts & Nooteboom, 1999). However, there will always be limitations in knowledge used in EIA and uncertainties often exists within any decision-making processes. There are two main causes of uncertainty in managing climate change issues. The first lies in the assumptions about future levels of atmospheric GHGs concentrations dependent on factors such as applicable policies and economic growth. The second lies in the differences between models through which EIA practitioners predict the complex natural processes of the atmosphere system. Accordingly, future climatic conditions and its related impacts are widely considered to be uncertain, and then cannot be easily assessed for conducting climate change adaptation measures during the scoping stage (Arvai et al., 2006).

Therefore, the EIA report should contain the sources of uncertainty and acknowledge limitation in current information on climate change (European Commission, 2013). Scoping must determine “how the uncertainties about changing climatic conditions can impact projects and how these uncertainties can be effectively incorporated into the analysis” (P. H. Byer & Yeomans, 2007). To identify uncertainties in adaptation measures, EIA practitioners benefit from two major approaches. A natural reaction when confronted with such uncertainties is:

- To ask those providing the information to improve knowledge and understanding, and
- To provide, as soon as possible, more accurate forecasts of future conditions.



At first, it requires project developers to consider environmental issues very early in the decision-making procedures. “Early global actions to reduce GHG emissions significantly outweigh the costs; the earlier effective measures are implemented, the lower the ultimate cost to society” (European Commission, 2013, p. 21). Therefore, EIA must analyze “the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the project” (Parr, 1999, p. 6). Early project analysis is valuable to decision makers, allowing them to incorporate measures to assess and manage related adverse impacts at the proposal level.

Secondly, by involving the public, EIA enhances the transparency of environmental decisions and consequently gains social acceptance. Involving stakeholders is another way that can reduce uncertainty associated with future local climatic conditions. Stakeholder engagement captures key climate issues and establishes a consistent approach to assessing impacts and looking for solutions. Stakeholders can help to highlight the areas of improvement in an effective way and collect suggestions for embedding climate change adaptation strategies into the proposed project as early as possible (Petts, 1999; Wood, 2003). Section 5.2.2.4 discusses climate change uncertainties affecting the adaptation strategy in detail.

#### **4.4 Summary**

The EPFIs created the EPs to conform to the pressures of shareholders, stakeholders, and institutional environments to facilitate sustainable development during project-financing activities. However, financing GHG-intensive infrastructure development projects not only hinders the EPFIs from achieving sustainable development, but also creates credit, reputation, and legitimacy risks. These risks have motivated the EPFIs to incorporate climate change issues into EIA, thus representing their response of acquiescence to external pressures. The EIA process, suggested in EPIII, has been formed based on the principles of the above-mentioned theories to help the EPFIs address climate change issues, manage credit and reputational risks caused by climate change impacts, and gain legitimacy by practicing CSR. EPIII’s climate change policies should be capable of fulfilling the principles of shareholder, stakeholder, and institutional theories, and

satisfying primary objectives of credit, reputation, and legitimacy risks management. To do so, EIA proposes the approaches of mitigation and adaptation strategies that are major attempts at climate change management. But these approaches may face the challenges of cumulative impacts of GHGs on climate change and uncertainty associated with future climatic conditions.

Based on these findings, Chapter 5 will review existing guidelines on incorporating climate change issues into EIA to develop a range of criteria integral to addressing climate change issues throughout EIA, while fulfilling the underlying theories, satisfying the motivators, and addressing the potential challenges.

# Chapter 5: Identifying Criteria for Incorporating Climate Change into EIA

## 5.1 Introduction

The direct relation between climate change and project financing requires the Equator Principles Financial Institutions (EPFIs) to adequately address project-associated climate change issues. Thus they would do well to pro-actively incorporate climate change issue into Environmental Impact Assessment (EIA). However, it is an immense challenge for the EPFIs to fully integrate climate change issues into the EIA process (Aljareo, 2014; Byer & Yeomans, 2007; Desmond, 2007; Kørnøv, Christensen, & Nielsen, 2005). In the context of the Equator Principles (EPs) and challenges facing their climate change policies, it is important to understand how climate change issues should be addressed through EIA, and what some of the constraints might be for doing so (Agrawala et al., 2012).

This chapter conducts an exhaustive primary content analysis on best practice policies aim to incorporate climate change issues into the EIA process. The best practice policies have been selected based on four key attributes (Section 5.2), whereby I develop a set of new criteria against which the likely effectiveness of the EIA process suggested by EPs in climate change management can be assessed, and then implementation challenges that the EPFIs may face can be identified. These criteria were established to fulfill the principles of underlying theories shaping the EPFIs' behaviors (Section 4.21), to satisfy motivators promoting climate change management (Section 4.2.2), and to address challenges of GHG's cumulative impact and future climatic uncertainty that impede climate change management throughout EIA (Section 4.3.2.2). Figure 2 illustrates the process used for creating the criteria.

## 5.2 Identifying Criteria

Chapter 5's analysis serves to develop a new set of generalized criteria for the effective incorporating of climate change issues into the EIA process. It can assist the EPFIs in determining how and where to incorporate climate change in project assessment. Doing so not only identifies the main criteria in the four EIA steps of screening, scoping, decision-making, and follow-up, but also introduces approaches for dealing with cumulative impacts and uncertainty about climate change.

### 5.2.1 Screening Stage

**Objective:** Describing and categorizing project.

**Information needs:** Project information: plan, design, and processes; project scope: spatial and temporal boundaries; and site information: location and local environment.

**Process:** Describing proposed project, identify project need and purpose, classify the project into three categories.

**Responsibility:** Project developers along with involved stakeholders.

**Ultimate principles and objectives:** Fulfilling shareholder and stakeholder theory; satisfying credit and reputational risk management motivators.

The screening stage seeks to define proposed actions and determine whether they are likely GHG-intensive and vulnerable to climate change, and then whether they need to be considered under the EIA process (CEAA, 2003). During the initial project screening, project developers should briefly identify and evaluate the project's impact on climate change as well as potential impacts from climate change on the project. At this stage, a qualitative analysis should be undertaken to classify projects into which of the three categories the project fits.

#### *5.2.1.1 Criterion #1: Engaging stakeholders throughout the project description and identifying need and purpose*

The screening stage starts with a development activity proposed by the project developers who then describe the project and produce a statement of need and purpose (Petts, 1999; Wood, 2003). Therefore, "project description" and "the statement of need and purpose" are the integral elements of the primary project screening.

The "project description" provides a brief overview of projects. In the context of climate change management, it will include general information on different phases of projects,

project location, and project-associated emissions (Bell et al., 2003). For example, construction and operational processes reveal the project's energy sources; anticipated emissions provide information on processes contributing to GHG emissions; and location identifies the project's vulnerability to climate change impacts (Nova Scotia Environment, 2011). Accordingly, the project description also identifies the climate change impacts of the project, along with any environmental issues that may affect the project (European Commission, 2013). Stakeholder engagement, therefore, is essential particularly to understand severe climate conditions prevalent in the local and affecting the design, construction, and implementation of the project (CARICOM, 2004, p. 27) (see Section 5.2.2.4).

Project developers should also state the “need and purpose” of the project, and consequently, defines its objectives and goals. This statement is critical because it determines the project objectives, which in turn formulate the criteria for developing and eliminating alternatives to the projects (Section 5.2.2.5.3). Therefore, project developers are required to engage stakeholders early in identifying the real need and purpose, as well as defining the objective of the project. For example, it may occur that project developers fabricate a problem/need (e.g., increasing traffic congestion in the city center) based on the construction of a proposed new highway, which is highly GHG intensive. But, stakeholder engagement helps verify the accuracy of the need and suggests other solutions (e.g., improving public transportation) that not only can ease the increasing congestion in the center of the city, but also prevent further GHG emissions.

Both of the above-mentioned considerations “depend highly on the affected groups’ perception, awareness, identification and experience of risks, therefore it is important to collect their opinions and provide them with the chance to participate in the decision-making process” (He, 2014, p. 66). NEPA places great significance on public participation and states that “[e]ffective public engagement will also help manage expectations with regard to the purpose and need, the scope of the broad environmental analyses, and the purpose, need and scope of subsequent site- and project-specific environmental analyses” (CEQ, 2014, p. 25). In this regard, European Commission Guidance on integrating climate change and biodiversity into EIA (2013) declares that

stakeholder engagement during the screening stage can help to “collect suggestions for building climate change mitigation and adaptation measures into the proposed project from the very beginning” (p. 28).

Accordingly, public participation in the project screening plays a key role in identifying climate change impact on the project and describing the project need and purpose. Early outreach to interested stakeholders can provide fresh perspectives and new ideas before determinations are made, and develop trust and good working relationships that may extend throughout the implementation of the proposed action. Therefore, involving stakeholders and making use of their knowledge enable developers to identify the most important issues and to establish a consistent approach to assess the impacts.

#### ***5.2.1.2 Criterion #2: Categorizing projects based on their climate change impacts***

Based on the information provided during the previous step, the screening stage should classify the project according to the nature and extent of potential climate change impacts. For example, regarding climate change adaptation, CARICOM (2004) requires the EIA administrator and project proponent to assign the proposed project to one of three categories reflecting the potential climate change impacts on the project. In the context of climate change mitigation, the World Bank (2008) also classifies the proposed project according to their GHGs into one of three categories. In general, project categorization consists of:

**Category A** includes projects that are likely to have significant adverse environmental impacts (GHG emission in terms of climate change management), or the anticipated environmental impacts (climate change-associated risks) on the project are highly likely to result in significant adverse social, economic, structural or environmental impacts. Category A projects will be considered as “full EIA-needed” projects (IFC, 2012).

**Category B** includes projects that their potential environmental impacts (GHG emission in terms of climate change management) are less adverse than those of Category A projects; or the anticipated environmental impacts (climate change-associated risks) on

the project are likely to result in social, economic, structural or environmental impacts that are less adverse than those of Category A projects. Category B projects will be considered as “partial EIA-needed” project (IFC, 2012).

**Category C** includes projects that are likely to have minimal or no adverse environmental impacts (GHG emission in terms of climate change management), or anticipated the anticipated environmental impacts (climate change-associated risks) on the project is minimal, short, or medium. Category C projects will be screened out from further EIA and considered as “no EIA-needed” project (IFC, 2012).

This categorization reflects the degree of project-associated environmental impacts including climate change risks, and then classifies projects based on their level of required EIA (i.e., full EIA-needed, partial EIA-needed, and no EIA-needed projects). Project categorization, therefore, will inform project developers on the rest of the assessment procedures and reveal which level of analysis is required throughout the scoping, decision-making, and monitoring stages. For example, developers may categorize a project into Category A, because a component of the project has some specific climate vulnerabilities such being susceptible to sea-level rise or a phase of the project produces significant levels of GHGs. In another case, the proposed project may be classified into Category C, because is not reliant on natural resources that can be affected by climate and is not located in hazard zones. Therefore, regarding the Category B project, developers should consider both mitigation and adaptation strategies throughout the EIA process; however, they can screen out the Category C project from further assessment.

The screening stage would be the first step towards managing credit and reputational risks caused by climate change issues. Describing projects through climate change perspective enables financial institutions to consider vulnerable aspects of projects, as well as their GHG-intensives phases. Doing so helps them to accurately recognize factors that influence their project revenue and manage potential credit risks caused by climate change impacts. Furthermore, this stage enables financial institutions to reduce the level of oppositions that may be raised by investing in environmentally risky projects and to

gain a higher level of social acceptance enhancing their reputation by engaging stakeholders during project description.

### **5.2.2 Scoping Stage**

**Objectives:** Determining the significance of the project's impacts on climate change and identifying the level of climate change impacts on the project.

**Information needs:** Initial project description; readily accessible sources on local climatic conditions; and detailed GHG accounting.

**Process:** Obtaining information on significant hazards and the project's vulnerabilities; and analyzing project-related climate change impacts.

**Responsibility:** Project developers and involved stakeholders.

**Ultimate principles and objectives:** Fulfilling stakeholder theory, managing credit and reputational risks

The scoping stage allows the practitioners to focus the EIA analysis on those issues that are relevant to the project, potentially important and reasonably foreseeable. Furthermore, project developers should identify potential climate change impacts on project through effective stakeholder engagement (CARICOM, 2004; CEAA, 2003; European Commission, 2013; IAIA, 2013). Therefore, in order to effectively incorporate climate change into EIA, the screening and scoping stages should be structured around two key recommendations:

- Climate mitigation concerns (Scope 1 & 2 GHGs, direct and indirect GHGs, significance of GHGs); and
- Climate change adaptation (climate change impact on project and stakeholder engagement).

#### ***5.2.2.1 Criterion #3: Assessing project-associated GHG emissions***

One of the major approaches to address climate change issues is climate change mitigation concern that should be identified during the scoping stage. Project developers must first assess the level of projects' GHG emissions to identify the need for and scope of practical measures for applying mitigation strategies (European Commission, 2013). To do so, both direct and indirect emissions, as well as Scope 1, 2, and 3 emissions should be taken into account (CEAA, 2003). GHG Protocol (2011) defines direct, indirect, and consequential emissions as follows:

- Direct GHG emissions from vehicles, factories, boilers, and power plants.



- Indirect GHG emissions from the use of electricity that is generated by power utilities.
- Consequential GHG emissions from a process like burning coal, curing of cement.

It further categorizes these direct and indirect emissions into three broad scopes:

- Scope 1 includes direct GHGs from sources that are owned or controlled by the entity such as emissions from fossil fuels burned on site and emissions from entity-owned or entity-leased vehicles.
- Scope 2 includes of indirect GHGs emitted from the generation of electricity, heating, cooling, or steam generated off site but purchased by the entity.
- Scope 3 comprises of indirect GHG emissions from sources not owned or directly controlled by the entity but related to the entity's activities, such as employee travel.

Therefore, to effectively carry out mitigation strategies, all above-mentioned sources should be quantified during the scoping stage.

#### ***5.2.2.2 Criterion #4: Considering GHG emissions during the life of the project***

When the screening stage seeks to identify climate change mitigation strategies, the integral concerns should be focused on the level of project-related GHG emissions during all phases of a project, including construction, operation, and decommissioning. It is worth noting that each phase of a project is a potential source of GHGs, thus to effectively evaluate the project impacts on climate change, associated emissions during the entire life of the project should be considered. In the case of dam projects, significant amounts of associated GHGs are produced during the construction phase, while in gold mining project construction and operation phases produce almost the same amounts of GHGs.

For instance, the Keeyask (hydro-electric) Generation Station<sup>15</sup>, estimated GHG emissions, over its 100-year life, are approximately 980,000 tonnes. GHG emissions associated with the construction phase and land use change account for approximately 96% of the life cycle GHG emissions. The operation and decommissioning phases only emit 3% of all project-related GHGs (Manitoba Hydro, 2013). In terms of the Prosperity Gold–Copper Mine Project in 2009, the construction phase (i.e. site clearing, grubbing and subsequent burning of vegetative debris) produces 57,408 tonnes of CO<sub>2</sub>e annually and operation phase (i.e. motor vehicles, construction, and mining equipment, diesel-fired generators) produce 52,636 tonnes of CO<sub>2</sub>e per year (Ohsawa & Duinker, 2014). In the context of gold mining projects like the KSM Project, the operation phase produces 170,285 tonnes of CO<sub>2</sub> equivalent annually that is almost 50,000 tonnes of CO<sub>2</sub> equivalent annually more than the construction phase producing 112,664 tonnes of CO<sub>2</sub> equivalent annually. These examples show that limited GHG accounting to the one phase of proposed project will ignore the large amounts of emissions leading to climate change exacerbation. Following the GHG assessment, project developers are required to determine the significance of the level of GHGs emitted by the project.

#### ***5.2.2.3 Criterion #5: Determining the significance of GHG emissions***

The screening stage of EIA determines the significance of project-related GHG emissions, as it is the linchpin for final decision-making. If EIA determines that a project is likely to have significant levels of GHGs project developers should consider mitigation strategies, otherwise the project will not be allowed to proceed. In order to assess the significance of project-associated GHGs, three factors should be considered:

- 1) The magnitude of the GHG problem,
- 2) The cumulative effect of GHG in the global context, and
- 3) The normative context in which climate change is occurring (Kruger, 2009).

First, there are several ways to characterize the magnitude of the GHG problem including the geographic extent of the effect, its duration, and the degree to which an effect is

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<sup>15</sup> The Keeyask Generating Station would be Manitoba's fourth largest generating station that produces an average of 4,400 gigawatt hours of electricity each year and would be located about 725 km northeast of Winnipeg, where Gull Lake flows into Stevens Lake - about 35 km upstream of the existing Kettle Generating Station.

irreversible. Climate change is a global issue and the geographic extent of the GHG problem is unlimited (Stewart, 1993). For example, a tonne of CO<sub>2</sub>e emitted by Canadian mining project will have the same adverse effect on China as a tonne of CO<sub>2</sub>e emitted by its local industries (Owen, 2008). Moreover, atmospheric GHG concentrations are fast hitting an unsafe limit, and with current levels of global GHGs, climate change is likely to cause irreversible impacts (IPCC, 2014a).

Second, “GHGs, however, pose special problems for the definition of significance. Relative to worldwide emissions, an individual project's GHG emissions are singly indeterminate of global climate change impacts, while cumulative effects from GHG emissions worldwide are immense” (Kruger, 2009, p. 163). A cumulative impact of project-associated GHG emissions is defined by CEQ (1981) “as the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects”. Therefore, “cumulative impact analysis is necessary because the full environmental impact of a proposed project cannot be gauged in a vacuum” (Communities for a Better Environment v. California Resources Agency, *supra*, 103 Cal.App.4th at p. 114, fn. omitted.). Project-related GHGs are emitted from a variety of sources and no one source individually seems important. For instance, it is likely impossible to quantitate how much a dam project’s GHGs would increase the global temperature. It is, therefore, difficult to encourage project developers to reduce associated GHGs at the project level (Ohsawa & Duinker, 2014). But each individual source can exacerbate the cumulative impacts of GHGs (Curtis, 2009; Holder et al., 2007). Thus, the significance of GHG emissions should be considered at a level that addresses the cumulative effects of climate change (Byer et al., 2012). This consideration discloses that merely because a project's GHG emissions may be incrementally small does not make its cumulative impact any less real (Kruger, 2009).

Third, value judgments that inform the significance of project-associated GHGs depend on the factual context within which the EIA process is carried out. If significance is context specific, where can the context be found? Since there is a plurality of views within any particular context, there might be no agreement on the weight ascribed to

certain value judgments. Therefore, “only after the context has been considered, and competing values have been evaluated, can a final significance judgment be made” (Kruger, 2009, p. 175).

Ultimately, in order to comply with the EIA’s goal of providing the decision maker with an objective basis for approving or denying a proposed project, the context for determining the significance of project-associated GHGs should be objectified. Moreover, since the scoping stage should quantify projects’ GHG emissions, it would be useful to articulate a threshold that marks the division between significant and insignificant impacts (Kruger, 2009; Murphy & Gillam, 2013). “In the interests of objectifying the context in which significance judgments are made, and to respond to the concern that there are no defined criteria to measure significance in relation to GHGs, it would be useful to articulate a threshold of significance” (Kruger, 2009, p. 176). Murphy & Gillam (2013) states that “[w]hile this new approach [formulating threshold], presented here for industrial projects, is reasonably clear, for specific projects with releases of GHGs that are estimated to be high (with mitigation measures included), the potential environmental effect may be rated as significant” (p. 1). Climate change policies often introduce a threshold defining the significance of projects in accordance with cumulative impacts. For example, in the United States federal regulations, “[i]f a proposed action would be reasonably anticipated to cause direct emissions [Scope 1] of 25,000 tonnes CO<sub>2</sub>e/year or more, agencies should consider this as an indicator that a quantitative and qualitative assessment may be meaningful to decision makers and the public” (Sutley, 2010). Guide to Considering Climate Change in Environmental Assessments in Nova Scotia decreases this threshold to 10,000 tonnes CO<sub>2</sub>e/year, and states that “[f]or those projects that will exceed 10,000 tonnes CO<sub>2</sub>e emissions annually, proponents/practitioners should develop a GHG Management Plan” (p.10). However, in the Middle East this threshold is significantly higher and the amounts of 100,000 and 1 million tonnes CO<sub>2</sub>e/year were used to distinguish medium and high releases (IAIA, 2013).

To formulate such thresholds, it should be considered that some sectors emit considerably more GHGs and thus require more stringent obligation to reduce their emissions.

California, for example, has sector-specific thresholds situate individual project's emissions within representative emissions from that sector. The California Air Resources Board (CARB) focuses on two common project types, including industrial and commercial/residential sectors, that are collectively responsible for a significant amount of GHG emissions. The CARB proposes an annual threshold of 7,000 tonnes of CO<sub>2</sub>e based on a technical benchmark of GHG emissions from a 10 million Btu/hr boiler fired with natural gas for determining whether an industrial project's climate-change related effects is significant. Thus, if project-related GHG emission is predicted to exceed the suggested thresholds, project developers should assess them under EIA. For residential and commercial projects, CARB recommends a threshold based first on the implementation of stringent performance standards, such as the California Green Building Code, or equivalent mitigation measures. According to CARB, "Residential and commercial projects will only be presumed to have a non-significant effect on the environment if, after meeting the above performance standards, the project's total net emissions are below a specified ceiling".

Regarding the principles and motivators fulfilled by Criteria 3, 4, and 5, GHG assessment mainly confirms the importance of considering project-related emissions in effective implementation of mitigation strategies. On the other hand, implementing climate change mitigation measures will enhance global air quality that is an emerging priority for stakeholders. Thus, these criteria require project developers and financial institutions to go beyond a unilateral consideration of economic outcome and take into account potential environmental issues. Doing so will improve banks reputations owing to a consideration of stakeholders' interests.

#### ***5.2.2.4 Criterion #6: Identifying climate change impact on project through stakeholder engagement***

The scoping stage of EIA also intends to assess climate change impacts on the project in an accurate way by identifying the vulnerable components of projects to climate change impacts and determining severe local climatic conditions. This impacts assessment during the scoping stage can help to increase project resilience and decrease its vulnerability to climate change issues leading to credit risks (Aljareo, 2014). Project developers are

required to identify a project's climate-sensitive components and then identify whether climate parameters, which are strongly related to the viability of the project (e.g., precipitation, wind, water levels, temperature, and humidity), are projected to change over the duration of the project (CEAA, 2003). When they assess the project's vulnerability, "it is important to consider critical interdependencies, as they can lead to 'cascade failure', where the failure of one aspect, such as flood defenses, can lead to other failures, e.g., flooded power stations leading to power cuts which in turn affect telecommunications networks" (The Royal Academy of Engineering, 2011, p. 5).

The consideration of climate change impacts on the project not only reflects the project's sensitivity to climatic change but also predicts variation in weather conditions. To this end, developers must summarize extreme climate events in the local climate and meteorology in the vicinity of the project's site by considering historical data and identifying future climate change scenario<sup>16</sup>. To understand the potential impacts of climate change on the project, developers need to enhance the level of confidence regarding climate change impacts on the project. EIA practitioners should focus upon readily accessible information sources, such as IPCC and previous EIA of similar projects. An accurate explanation of the climate change scenario can determine whether the predicted climatic conditions should be considered in the project design and how they may impact the project (European Commission, 2013; Nova Scotia Environment, 2011).

However, confidence in the accuracy of climate change impact on projects is lower at the local or regional levels than at the continental level. In local contexts, the mentioned readily accessible sources are not clearly available and often the resolution of the information will not match project needs. Consequently, decision makers are not provided with the information to address uncertainties associated to the scale of climate change impacts. To fill the gap of related uncertainty surrounding projections of climate change impacts and the limitations inherent in existing data, stakeholders should be engaged when compiling climate change information (Byer & Yeomans, 2007; European

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<sup>16</sup> Byer & Yeomans (2007) presents "three basic analytical approaches to uncertainty analysis (scenario analysis, sensitivity analysis, and probabilistic analysis) that developers could use for integrating climate change induced impacts and their uncertainties into their environmental assessments" (p. 85).

Commission, 2013). Stakeholders can help developers to minimize uncertainty about future climatic uncertainty and enhance project resilience by providing more information on severe weather conditions and recommending locally adequate adaptation measures. Stakeholder engagement in this stage can also promote the accountability and transparency of the EIA process to implement better adaptation strategies (Chang & Wu, 2013). Indeed, involving a wide variety of stakeholders creates opportunities for gathering more accurate data and bringing bright new ideas about adaptation strategies into the decision-making process.

#### *5.2.2.5 considering alternatives*

Alternative analysis “provide[s] a comparison from which decision-makers can determine whether ... a proposed project emits the least possible GHG emissions amongst similar projects that achieve the same goal” (Kruger, 2009, p. 177). It also compares the resilience of proposed project to climate change impacts with reasonable alternative approaches and design (CARICOM, 2004). Alternative analysis is a means through which “project developers can meet the project’s objectives by carrying out a different type of action, choosing a different location or adopting a different technology or design for the project” (European Commission, 2013, p. 35). Indeed, alternative analysis enables developers to identify the preferred option that is less GHG-intensive and more resilient to climatic conditions, and consequently can achieve the project’s goal in a more sustainable way (Aljareo, 2014; Desmond, 2007; Glasson et al., 2005; Posas, 2011; World Bank, 1996).

**Climate change mitigation:** The European Guidance on Integrating Climate Change into EIA declares “at the more detailed level of the process, alternatives may also merge into mitigating measures, where specific changes are made to the project design or to methods of construction or operation to prevent, reduce and where possible offset any significant adverse effects on the environment” (p. 35). Alternative analysis is a major part of the United States’ EIA policy under which developers must demonstrate that a range of alternatives has been considered to choose the preferred one achieving the project’s goal with the least significant climate change impacts (Jones, 1999). In the Canadian Environment Assessment Act 2012, EIA practitioners should consider “alternative means

of carrying out the designated project that are technically and economically feasible, and the environmental effects of any such alternative means” (p. 13).

Consideration of reasonable alternatives within the assessment “offers an opportunity to explain the contribution that different options may have for addressing climate change” (The Scottish Government, 2010, p. 11). In terms of climate change mitigation, “EIA should explicitly identify and evaluate alternative ways to reduce GHG emissions for all elements and phases of the proposal” (Byer et al., 2012, p. 2). The comparison of alternatives here aims to determine which option will achieve the goals of the project while causing the least environmental impacts (Clark & Richards, 1999). Alternatives should be considered to minimize GHGs by selecting different technologies or designs (DETA, 2004). For example, alternative methods for carrying out construction and operational activities that use energy and resources more efficiently can contribute to climate change mitigation. Table 1 summarizes a number of examples of alternative analysis for climate change mitigation.

**Table 1: Examples of alternative analysis concerning climate change mitigation (European Commission, 2013)**

Scope 1 GHG Emissions	<ul style="list-style-type: none"> <li>• Consider different technologies, materials, and supply modes to avoid or reduce project-related GHG emissions.</li> <li>• Protect natural carbon sinks such as peat soils, woodlands, wetland areas, and forests that could be endangered by the project.</li> </ul>
Scope 2 GHG Emissions	<ul style="list-style-type: none"> <li>• Use recycled/reclaimed and low-carbon construction materials.</li> <li>• Build energy efficiency into the design of a project (e.g., installing south facing windows for solar energy, passive ventilation, and low-energy light bulbs).</li> <li>• Make use of renewable energy sources.</li> </ul>
Scope 3 GHG Emissions	<ul style="list-style-type: none"> <li>• Choose a location that is close to a public transportation.</li> </ul>



**Climate change adaptation:** Project alternatives could be assessed not only based on the goal of identifying the least risky alternative, but also on the alternative that are more resilient to the future climate conditions. Alternative analysis is integral to make optimal choices and reduce uncertainty about potential climate change impacts on the project. Given the intrinsic uncertainty surrounding climate change impacts, the consideration of alternative analysis will indicate a higher adaptive capacity to respond to these uncertainties (He, 2014). For example, to avoid problems associated with climate change, such as flood risk and rising sea level, developers should hinder projects being developed on areas of flood risk.

For climate change adaptation, project developers should also use alternative analysis to decrease the project vulnerability to climate impacts and identify appropriate options that can enhance its resilience to climate change (European Commission, 2013). Project developers need to consider alternatives that are more resilient to the effects of a changing climate (CEQ, 2014). When alternatives are analyzed, it should be tested how each alternative will react to climate change impacts. Thus “one criterion for the comparison of alternatives could be how well the project is expected to withstand the expected impacts of climate change” (Curtis, 2009, p. 25). Table 2 provides key issues that should be considered in alternative analysis for adaptation strategies.

**Table 2: Key concerns that should be considered during alternative analysis for climate change adaptation (European Commission, 2013).**

- Using reversible and flexible options that can be modified if significant impacts start to occur;
- Identifying options that yield benefits under different climatic scenarios;
- Adding safety margins to new investments to ensure responses are resilient to a range of future climate impacts;
- Promoting soft adaptation strategies, which could include building adaptive capacity to ensure a project is better able to cope with a range of possible impacts;
- Shortening project times; and
- Delaying projects that are risky or likely to cause significant effects.

Therefore, alternative analysis should comprehensively compare associated impacts, both direct and indirect on the environment as well as consider climate change impacts on the project to select the environmentally preferred options. Theoretically, the number of possible alternatives to a proposed action is interminable. Thus, a range of potential alternatives should be restricted to feasible and reasonable ones (Steinemann, 2001). The Council on Environmental Quality (CEQ) (2014) highlights the importance of reasonable alternatives and states that project developers “should consider a reasonable range of alternatives consistent with the purpose and need for the proposal, and, if such information would be useful to advance a reasoned choice, a comparison of alternatives and potential mitigation that addresses GHG emissions, carbon sequestration, and the impacts of climate change” (p. 77805). But this question is raised what are the criteria for selecting feasible and reasonable alternatives that can be accomplished by the developers?

#### **5.2.2.5.1 Criterion #7: Considering no-action alternative**

Project developers should consider a wide range of alternatives, including no-action, that could meet the stated objectives while emitting a lower level of GHGs. The no-action alternative is about the decision not to build a new project or extend an existing one (Steinemann, 2001). The no-action alternative is designed to define baseline conditions based on which project developers will select preferred alternatives. It enables developers to understand the actual rate fluctuations in GHG emissions (Christopher, 2007). The no-action alternative “provides the means to compare the environmental, social, and economic impacts of various project alternatives with those of a scenario in which the project is not implemented. In evaluating the no-action alternative, it is important to take into account all probable public and private actions which are likely to occur in the absence of the project” (World Bank, 1996, p. 7). Moreover, since the no-action alternative provides a means to compare the impacts of different options, it should be included in every environmental assessment as it (DETA, 2004).

EIA systems typically are required to analyze the consequences of a range of potential alternatives, including the no-action alternative (Christopher, 2007). It is clearly defined in CEQ (2014) and is required by European Commission (2013) either as a specific

alternative or to define the baseline. The Caribbean Policy for Adapting to Climate Change (2014), in the case of Category A projects, also needs developers to identify “the project’s potential negative and positive environmental impacts, compares them with those of feasible alternatives (including the “without project” situation)” ( p. 14). It is not true to assume that the no-action alternative is necessarily the least GHG-intensive option (Steinemann, 2001). In many cases, expansions and upgrades of existing industries lead to technological improvements reducing GHG emissions, in addition to the primary aim of increased production capacity. Therefore, the no-action alternative along with “other relevant alternatives must be described, assessed, and evaluated at the same scale and level of detail that enables adequate comparison with the proposed project” (DEAT, 2004, p. 7).

#### **5.2.2.5.2 Criterion #8: Considering multiple alternatives**

Multiple alternatives include different types of design i.e., “alternative means” and approaches i.e., “alternatives to” the project (Petts, 1999; Wood, 2003). Multiple alternatives are also described in European Commission (2013) as essentially different ways of meeting the project’s objectives “by carrying out a different type of action, choosing a different location or adopting a different technology or design for the project” (35). The United Nations Economic Commission for Europe states alternative analysis can provide opportunities for better designs and feasible alternatives for the proposed project location, and the needed technology in order to reduce project-associated impacts. The Netherland Commission for Environmental Assessment (NCEA) also “requires insight to be provided about the possible location of the pipelines, the storage location, the alternative efficient uses and their environmental risks, and the possible ways these risks could be reduced” (NCEA, 2009, p. 17).

Alternative analysis should consider not only alternative designs but also various approaches to accomplish the objectives of an action. An alternative approach is a functionally different way to achieve the objectives, but an alternative design is a functionally similar way (Steinemann, 2001). Both of these alternatives are potential to significantly reduce the level of project-related GHG emissions. For example, an alternative approach to the construction of a new highway would be the expansion of

public transit that will emit a lower level of GHG emissions. Alterations in project design, such as using different types of energy sources, can also reduce environmental implications and lead to a sufficient reduction in GHG emissions (Christopher, 2007). Additionally, CEQ (2014) states that “agencies conducting analysis of permitted activities that contribute to climate change, where these activities are considered as ongoing management practices, should consider the cessation of the permitted activity as a reasonable alternative” (p. 77804).

Therefore, there are different types of alternatives but not all of them are necessarily appropriate for each project. They should be identified as early as possible in the project cycle by engaging involved stakeholders, and then, be assessed at a level that enables selecting the most appropriate option (DETA, 2004).

#### **5.2.2.5.3 Criterion #9: Engaging stakeholders throughout alternative analysis**

Alternative analysis procedures initiate with proposed project supposed to produce significant amounts of environmental impacts. Then, the developers together with involved stakeholders should identify the purpose and need of proposals (Smith, 2007). Engaging stakeholders during alternative analysis to address climate change issues can be beneficial in three ways. First, stakeholders are a potential source of valuable local knowledge and information on the acceptability of certain alternatives (Byer & Yeomans, 2007). It gets more importance when project developers seek to reduce the uncertainty associated with changes in climatic parameters and to select options more resilient to climate change impacts. The engagement of stakeholders ensures the contribution of new perspectives and an overall increased knowledge to provide a better understanding of which alternatives are more resilient to climate change impacts (Jones, 1999; World Bank, 1996). Second, public participation helps to build consensus for the preferred alternative (Desmond, 2007). When a project is potentially controversial due to the level of GHG emissions, it is then essential to involve stakeholder regarding the analysis of alternatives (World Bank, 1996). Doing so is particularly important in developing projects dependent on stakeholders for their successful implementation and also is a great opportunity for enhancing the project developers’ reputation. Finally, engaging

stakeholders very early in defining project can expand the domain of screening criteria to go beyond technically and financially feasible options and to consider environmental concerns such as less GHG-intensive alternatives.

The CEQ states that “[i]n any event the lead agency is encouraged to identify the environmentally preferable alternative(s) ... . In all cases, commentors from other agencies and the public are also encouraged to address this question [what is environmentally preferable?]” (CEQ, 1981). CEQ (2014) also recommends that developers make better use of collaborative processes to work with stakeholders to arrive at a mutually agreeable set of alternatives. The alternative analysis process should engage stakeholders and take into account their views on the preferred alternatives in three ways: defining development objectives, providing input to the identification of alternatives, and adding environmental concern to the screening criteria.

As mentioned in Section 5.2.1.1, stakeholders should effectively be involved in identifying need and purpose based on which project developers evaluate alternatives. CEQ (2014) declares that “the purpose and need ... should be written to avoid eliminating reasonable alternatives and focused enough for the agency to conduct a rational analysis of the impacts and allow for the public to provide meaningful comment on the programmatic proposal” (p. 19). The project objectives might be defined so narrowly to limit reasonable alternatives, and consequently, “[o]pportunities to explore and develop alternatives can be missed if the objectives of the proposed action are defined too narrowly” (Steinemann, 2001, p. 11).

As such, the stakeholder identification plays a main role in determining reasonable alternatives and selecting the preferred one. In addition, stakeholders have an important contribution to assist in the identification of alternatives and reduce uncertainty, particularly where local knowledge is required (CARICOM, 2004). For example, in terms of climate change impacts on projects, readily accessible data may lack enough information on the local impacts, and thus stakeholders can help to identify key climate change issues prevail in that area (European Commission, 2013). Stakeholder engagement can also provide suggestions for selecting alternatives that are less GHG-

intensive and more resilient to climate change impacts. Lack of stakeholder engagement in assessing alternatives will lead to subjective and casual evaluations that can ignore environmentally sound and publicly acceptable alternatives.

#### **5.2.2.5.4 Criterion #10: Disclosing the result of alternative analysis**

Following the identification and consideration of different alternatives, project developers in a partnership with stakeholders will evaluate options. Once all reasonable alternatives are identified, it is necessary to focus on a few and assess them and to eliminate others. Then, the final selection of the preferred alternative and the reasons for eliminating others will be publicized. The assessment and elimination processes should be carried out through consultation with stakeholders and then be well publicized to explain why certain alternatives are not being considered in detail. The result publicized explains criteria used to select the preferred alternative and motivations for rejecting others as well as methods for comparing them (Glasson et al., 1999).

Since, EIA seeks to assess key climate change issues (European Commission, 2013), the result of alternative analysis should then be publically available. For example, (CEQ, 2014, p. 22) requires EIA practitioners to “include a brief written discussion of the reasons alternatives were eliminated to provide the rationale for narrowing the range of reasonable alternatives to be considered in those tiered NEPA documents” (p. 22). That is because “all people who are potentially affected by the proposal and would like to participate in the assessment process should be able to understand how climate change has been addressed” (Byer et al., 2012, p. 3). This publication is central to the transparency of EIA and provides involved stakeholder with a means to understand what the likely effects of the preferred choice and also enhances the credibility of decision-making processes (Kværner et al., 2006; The Scottish Government, 2010).

Regarding climate change management, alternative analysis report must elaborate that how the level of climate change impacts are different in different alternatives (Posas, 2011). Therefore, alternative analysis needs to be publicized in order to be robust and transparent to convince stakeholders of its reliability and validity. It will facilitate transparency around final decisions and enable fuller consideration of climate change

impacts. Accordingly, alternative analysis helps EIA practitioners to fulfill the principles of stakeholder, stakeholder, and institutional theories, and to satisfy the motivators of credit, reputation, and legitimacy risk management. By selecting the preferred alternative that its components are resilient to climatic conditions and not reliant on natural resources susceptible to extreme weather variations with climate change, project developers can ensure the financial revenues of their investments. Furthermore, alternative analysis can provide a comparison from which project developers can determine whether a proposed project produces the least possible GHG emissions amongst similar projects. Doing so enables them to invest in more environmentally sound projects, whereby they can improve their reputation among stakeholders. Engaging stakeholder through the alternative analysis process and then disclosing the final decision on the preferred alternative are a great step towards enhancing transparency within the decision-making process and then gaining legitimacy by demonstrating the positive image of financial institution's CSR practice.

### **5.2.3 Decision-Making Stage**

**Objective:** Selecting the preferred alternative.

**Information needs:** the EIA report.

**Process:** Justifying the selection of final project and publicizing the result.

**Responsibility:** Project developers and stakeholders.

**Ultimate principles and objectives:** practicing CSR and attaining legitimacy.

#### ***5.2.3.1 Criterion #11: Integrating the results of the EIA report in final projects***

The decision-making stage often focuses on the choice between alternative proposals and tries to justify final decisions by considering the outcome of the EIA report that includes a summary of public comments, mitigation measures, the project's purpose, alternative means of carrying out the project, the need for a follow-up program, and the capacity of renewable resources likely to be affected by the project (Canadian Environmental Assessment Agency, 2012). Indeed, this stage is relatively complicated as it seeks to integrate socio-environmental issues with financial issues and balance between various interests of social, environmental, and economic development. Since there is no financial threshold for accepting more environmentally friendly or social alternatives, EIA gives

the priority to environmental interest. It states that if an environmentally acceptable alternative can meet project need and purpose, it should be considered in the final project. This process includes a large number of trade-offs between the objectives of the proposal, alternatives to it, its positive and negative impacts, and the mitigation and adaptation measures proposed. The decision is usually dependent upon environmental merits of the proposal as well as political circumstances that “may well out-weigh the findings of technical evaluation in the interactions between elected or appointed representatives from which the decision emerges” (Wood, 2013, p. 223). Therefore, decision making on complex projects is not straightforward and may involve a wide range of stakeholders. Meaningful stakeholder engagement can balance transparency in decision making and increase public confidence in the EIA process. EIA then tries to ensure that the decisions that are made are being justified in light of environmental norms. The decision-making process although cannot guarantee that the selected option will be the less-GHG intensive or the most resilient option, can demonstrate project developers’ environmental stewardship and then enhance their legitimacy.

### 5.2.4 Follow-up and Reporting Stage

**Objective:** Evaluating the project’s compliance with the EIA report.

**Information needs:** Climate change impacts on the project and its GHGs.

**Process:** Monitoring both the impact of climate change on the project and the project’s impact on the environment and publicizing the reporting.

**Responsibility:** Responsible authority (third party).

**Ultimate principles and objectives:** Managing credit and reputational risks, as well as practicing CSR.

There are numerous factors, which can be monitored to establish the effectiveness of the EIA process, and subsequently to amend the process to incorporate feedback. The results from the monitoring program should be publicized in order to assist EIA practitioners in identifying unanticipated impacts; refining management measures; and evaluating project activities (CARICOM, 2004). Monitoring during the construction, operation, and decommissioning phases of projects tests whether predictions made in the EIA report are accurate and project comply with mitigation and adaptation strategies recommended in that report. Thus, in the context of climate change management, EIA practitioners must



develop a climate change-monitoring program to:

1. Quantify the level of project-related GHG emissions and evaluate mitigation measures; and
2. Assess climate change impacts on projects and ungraded adaptation measures.

#### ***5.2.4.1 Criterion #12: Monitoring projects' GHG emissions***

During the monitoring, the follow-up phase, EIA practitioners monitor the status of the project and the likely effectiveness of the mitigation measures that have been implemented (CEAA, 2003, p. 12). The monitoring stage should assess project-associated GHGs in all phases of the project to confirm whether mitigation measures are performing as designed and consistent with the GHG management plan. Then, if necessary, new mitigation measures will be introduced in response to new information to bring the project in line with the EIA report. This process helps developers protect their reputation from social opposition against financing environmentally risky projects and reduce the risk of lender reliability.

Moreover, in common with other elements of EIA, the project monitoring should be effective and can address the goal of climate change management. In so doing, the result of monitoring should be publically available to increase transparency of decision-making process with the project-financing sector, and consequently, enable project developers to gain legitimacy and practice CSR.

#### ***5.2.4.2 Criterion #13: Monitoring projects vulnerability to climate change impacts***

The knowledge base for project-specific areas with respect to climate change will normally improve over the life of a project (Bell et al., 2003). The monitoring stage can include, for example, visual observations or surveying of physical adaptation measures and should include periodic review of climate change projections to evaluate whether adaptation measures are implemented or need to be modified (Nove Scotia Environment, 2011, p. 11). Regarding climate change impacts on projects, the monitoring stage will ensure that whether the actual impacts experienced by projects do not differ significantly from the impacts that were estimated in the EIA analyses (Bell et al., 2003). Thus, if a project is particularly sensitive to climate change over its predicted life, the monitoring

stage should include periodic assessment of climate change impacts, based on reviewing new information and/or monitoring specific climate elements (CEAA, 2003).

Furthermore, project developers should engage stakeholder to reduce their uncertainty about future climatic conditions and publicize the result of project monitoring. This monitoring process helps developers to expand their knowledge of climatic conditions and improve adaptation strategies minimizing potential credit risks caused by climate change impacts, as well as enhance their legitimacy through transparent decision-making.

### 5.3 Summary

The above-mentioned criteria should be used to adequately incorporate climate change issues into the EIA process. Doing so enables project financiers to fulfill the underlying theories shaping their behavior and satisfying motivators for climate change management in different ways. Table 3, below, tries to demonstrate linkages between each criterion with theories and motivators that they have the strongest relationship with. The following Chapter then will analyze whether the EIA process suggested in the EPs has met these criteria to assess the likely effectiveness of their climate change policies and identify challenges the EPFIs may face during their implementation.

**Table 3: Analyzing the relation between each criterion with theories and motivators**

Criterion #	Fulfill Shareholder Theory	Fulfill Stakeholder Theory	Fulfill Institutional Theory	Manage Credit Risk	Manage Reputation Risk	Attain Legitimacy
1: Describing project	✓	✓		✓	✓	
2: Classifying projects	✓	✓		✓	✓	
3: Considering all types of GHGs		✓			✓	
4: Accounting GHGs during the life of projects		✓			✓	
5: Identifying the		✓			✓	

significance of GHGs						
<b>6:</b> Identifying climate change impacts on projects	✓			✓		
<b>7:</b> Considering no-action alternatives	✓	✓		✓	✓	
<b>8:</b> Considering multiple alternatives	✓	✓		✓	✓	
<b>9:</b> Engaging stakeholders in alternative analysis	✓	✓		✓	✓	
<b>10:</b> Disclosing the assessment of alternative analysis			✓			✓
<b>11:</b> Integrating the results of EIA in final projects			✓			✓
<b>12:</b> Monitoring project-related GHGs		✓	✓		✓	✓
<b>13:</b> Monitoring project vulnerability	✓		✓	✓		✓

# Chapter 6: Applying Criteria to the Equator Principles’ EIA Process

## 6.1 Introduction

The latest version of the Equator Principles, EPIII, serves literally as a standard for incorporating climate change issues into its EIA process. EPIII needs the Equator Principles Financial Institutions (EPFIs) to strengthen climate change due diligence by considering project-associated climate change impacts in a project EIA. However, debates continue on the likely effectiveness of the EIA process represented by EPIII to address climate change impacts and the challenges the EPFIs may face while applying this process. By re-narrating the insights I gained through the descriptive and prescriptive analysis, I try to shed some light on the central research question, i.e., which challenges the EPFIs may face while implementing the climate change policies suggested in EPIII.

This Chapter positions its argument among ongoing discussion concerning the climate change policies of the EPs by applying the 13 criteria developed through policy analysis in the previous chapter. Chapter 6 includes a legal analysis of the actual wording of the EPIII’s climate change policies and also investigates the World Bank- and IFC-applicable regulations (see Section 3.5.1). This analysis will reveal what has been achieved so far and which necessary reforms should be adopted in the future to better address climate change within the project-financing sector. It aims to provide a baseline for a revision of EPIII and pave the way towards EP IV in order to enhance the likely effectiveness of EPs in climate change management. This analysis also contributes to the new governance literature by assessing voluntary environmental initiatives and soft law in climate change management.

## 6.2 Applying Criteria

The following sections focus on the screening, scoping, decision-making, and monitoring stages of EIA within the EPs, and seek to analyze their challenges of addressing climate change based on the 13 criteria developed in Chapter 5. Under each sub-section, the position of EPIII’s climate change policies will be explained, and then, the likely effectiveness and implementation challenge of these policies will be assessed and

identified in light of the applicable criterion.

## **6.2.1 Screening Stage**

This section analyzes the application of two criteria 1) describing project through stakeholder engagement, and 2) categorizing the project within the EPIII. These criteria underpin the rest of the EIA process.

### ***6.2.1.1 Engaging stakeholders throughout the project description and identifying need and purpose***

#### ***Equator principles lack explicit requirements for stakeholder engagement during the project description.***

Under the Principle 5, EPIII states that “the EPFI will require the client to demonstrate effective Stakeholder Engagement as an ongoing process in a structured and culturally appropriate manner with Affected Communities and, where relevant, Other Stakeholders” (Equator Principles, 2013b, p. 7). However, public participation within EPIII often starts too late to influence decision making regarding “the project description”, “need and purpose”, and “the project objective” (Holder et al., 2007; Lee, 1989; Wood, 2003).

Stakeholder engagement can play a key role, first, in identifying climate change impacts on the project; in terms of vulnerability assessment, timely and effective stakeholder engagement provides information on local severe climatic conditions. Second, stakeholder engagement can hinder developers identifying a wrong purpose based on a fabricated need. For example, when project developers propose to construct a new highway for expediting local transportation, involved stakeholders are responsible to determine to what extent facilitating transportation is a real need and whether a new highway project can address the need. Third, stakeholder engagement is integral for identifying the project’s objective and determine the criteria based on which project developers can accept or reject potential alternatives. When they are not effectively engaged, developers will define the project’s objective too narrowly and dictate the scope of alternatives needed to be considered in EIA (Steinemann, 2001). As an example, without stakeholder engagement, project developers propose a new GHG-intensive connector highway with the objective of “connecting the two highways” to enhance

transportation capacity required by local demand. According to this slender objective, the only alternatives that can be seriously considered are different alignments of the proposed connector highway. However, stakeholder engagement could have changed the project's objective to "facilitating the local transit", and then improving public transportation could be a feasible alternative with lower levels of GHGs. In another example, for a proposed reservoir project, project developers define the project's objective as "creating a single resource to supply the water district" to address projected needs. This definition would justify developing the proposed reservoir, which produces a large amount of GHGs. But, if stakeholders were engaged in identifying the project's objective, they have argued that buying water from a neighboring district could be a reasonable alternative to the development of a single reservoir (Steinemann, 2001).

Given the importance of public participation in the screening stage, EPIII is completely silent and does not require clients to involve stakeholders. Although public consultation can fulfill the principles of shareholder and stakeholder theories through reducing financial risks caused by climate change impacts on projects and assessing project-associated climate change impacts (Huyskes et al., 2006), the EPIII lacks demanding requirement for stakeholder engagement. The lack of stakeholder engagement will then impede the EPFIs satisfying credit and reputation risk management motivators.

#### ***6.2.1.2 Categorizing projects based on their climate change impacts***

***Equator Principles' requirement for project categorization inadequately includes the climate change impacts of projects and entirely ignores climate change impacts affecting projects.***

EPIII states: "When a Project is proposed for financing, the EPFI will, as part of its internal environmental and social review and due diligence, categorise it based on the magnitude of its potential environmental and social risks and impacts. Such screening is based on the environmental and social categorisation process of the International Finance Corporation (IFC). . . . The categories are:

Category A – Projects with potential significant adverse environmental and social risks and/or impacts that are diverse, irreversible or unprecedented;

Category B – Projects with potential limited adverse environmental and social risks

and/or impacts that are few in number, generally site-specific, largely reversible and readily addressed through mitigation measures; and

Category C – Projects with minimal or no adverse environmental and social risks and/or impacts” (p. 5).

The IFC provides a qualitative guideline comprised of “lists” and “criteria” (IFC, 1998, 2011, 2012a) based on which the EPFIs are required to categorize proposed projects (Equator Principles, 2013b). The following discussion explains these “lists” and “criteria” and reveals their challenges in categorizing projects according to levels of climate change impacts.

### Lists

Experiences have shown that certain types of projects are less likely to have significant environmental impacts. In contrast, other types of projects can potentially cause more serious effect, and hence, require full environmental assessment. Therefore, projects may be categorized in different lists as being either a) positive or inclusive, for projects that will require a mandatory EIA or b) negative or exclusive, for projects that do not need to be assessed under EIA. The EPFIs use both of these lists to classify projects as Category A, B, or C. Table 4 lists a number of examples of Category A and B projects that always need to be considered through EIA because of their scale, location, and potential environmental impacts. It also lists Category C projects, which require no analysis under the EIA process. The entire Category A, B, and C projects are mentioned in Annex B of the IFC’ Procedure for Environmental and Social Review of Projects (1998).

**Table 4: Project categorization within the IFC (IFC, 1998)**

Category A Projects	Category B Projects	Category C Projects
<ul style="list-style-type: none"> <li>• Large dams and reservoirs</li> <li>• Forestry (large scale)</li> <li>• Agro-industries (large scale)</li> <li>• Industrial plants (large-scale)</li> <li>• Major new industrial estates</li> <li>• Major oil and gas</li> </ul>	<ul style="list-style-type: none"> <li>• Agro-industries (small scale)</li> <li>• Electrical transmission</li> <li>• Renewable energy (except large hydroelectric power projects)</li> <li>• Tourism (including hotel projects)</li> <li>• Rural water supply and</li> </ul>	<ul style="list-style-type: none"> <li>• Advisory assignments</li> <li>• Factoring companies</li> <li>• Life insurance companies</li> <li>• Mortgage securitization</li> <li>• Securities underwriters</li> </ul>

projects <ul style="list-style-type: none"> <li>• Large ferrous and non-ferrous metal operations</li> <li>• Large port and harbor developments</li> <li>• Large thermal and hydropower development</li> <li>• Manufacture, transportation, and use of hazardous and/or toxic materials</li> </ul>	sanitation <ul style="list-style-type: none"> <li>• Manufacture of construction materials</li> <li>• General manufacturing</li> </ul>	and broker/dealers <ul style="list-style-type: none"> <li>• Technical assistance</li> <li>• Rights issues</li> </ul>
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However, the IFC categorization (i.e., list approach) has some challenges:

- 1) In terms of climate change issues, it does not include the level of project-associated GHGs as a factor for project categorization, and
- 2) It does not define the meaning of large and small scale and major projects, such as “large-scale industrial plants” and “major oil and gas projects”.

According to the challenge 1, although most of the GHG-intensive activities like large dams and reservoirs have been listed as Category A projects whose environmental impacts need to be fully assessed, Category B projects may also be environmentally risky and GHG intensive. Mikadze (2012) states “[a]s revealed by a qualitative study conducted by Haack, Schoeneborn, and Wickert, various actors on the ground have observed that the EPs’ more rigorous requirements are in fact sometimes circumvented by EPFI who classify projects that should fall into Category A as Category B or Category C” (p. 1406). For example, manufacturing construction material is listed as a Category B project; however, large-scale concrete manufacturing projects can emit huge amounts of GHGs and should be considered as “full EIA needed”. Concrete made with cement is the most widely employed construction material in terms of volume, and as such has a significant impact on the environment and sustainable development.

Although, “the cement industry produces approximately 5% of global manmade CO2 emissions”, it is not considered under full EIA (IFC, 2011). Moreover, tourism projects, such as hotels, that by default should be classified in Category B, may require large-scale



construction with high levels of GHG emissions. Therefore, the list approach may lead to inadequate categorization, and consequently affect the EPFIs attempting to address climate change issues.

Apart from the IFC's lists serving to guide the EPFIs in project categorization, some ambiguities associated with scale impede the EPFIs adequately consider climate change issues in screening. For example, in 2014, the TD bank, which adopted EPIII, financed nine mining and oil & gas projects and classified them as Category C (TD-website). BNP Paribas, in 2013, classified a thermal power project into Category C. However, the IFC's lists consider "Major oil and gas projects" and "large thermal development" as Category A project, which is "full-EIA needed" (BNP Paribas-website). Another example in case of TD banks is the consideration of the transportation project as Category C. In 2014, TD banks declared one transpiration project financing and classified it in Category C. CaixaBank also classified a tourism project into Category C (TD-website). However, the IFC's Procedure Environmental and Social Review of Projects clearly brings "transpiration" under Category A projects and "Tourism" under Category B project. This difference between the IFC's policy concerning project categorization and its actual practice by the EPFIs might be caused by the subjective definition of the major/large scale.

### **Criteria**

Along with the above lists, the IFC represents additional criteria for project categorization to provide the EPFIs with more certainty in determining what level of environmental assessment is likely to be required. The EPs' screening criteria introduced by the IFC's Procedure Environmental and Social Review of Projects (1998), are mainly selected in accordance with the size and location of a project based on which the EPFIs can determine the likely significance of project-related impacts (Table 5).

**Table 5: The IFC' categorization criteria (IFC, 1998, 2012a)**

Category A Projects	Category B Projects
<ul style="list-style-type: none"> <li>• Large scale projects</li> <li>• Have irreversible impact</li> <li>• Locate in environmentally sensitive areas, such as mangroves, wetlands, and rainforests</li> <li>• Affect vulnerable groups</li> <li>• Involve involuntary displacement</li> </ul>	<ul style="list-style-type: none"> <li>• Have site-specific impacts</li> <li>• Have reversible and readily addressed impacts</li> <li>• Affect less than Category A projects on wetlands, forests, grasslands, and other natural habitats</li> <li>• Affect broader area</li> <li>• Affect cultural heritage sites</li> </ul>

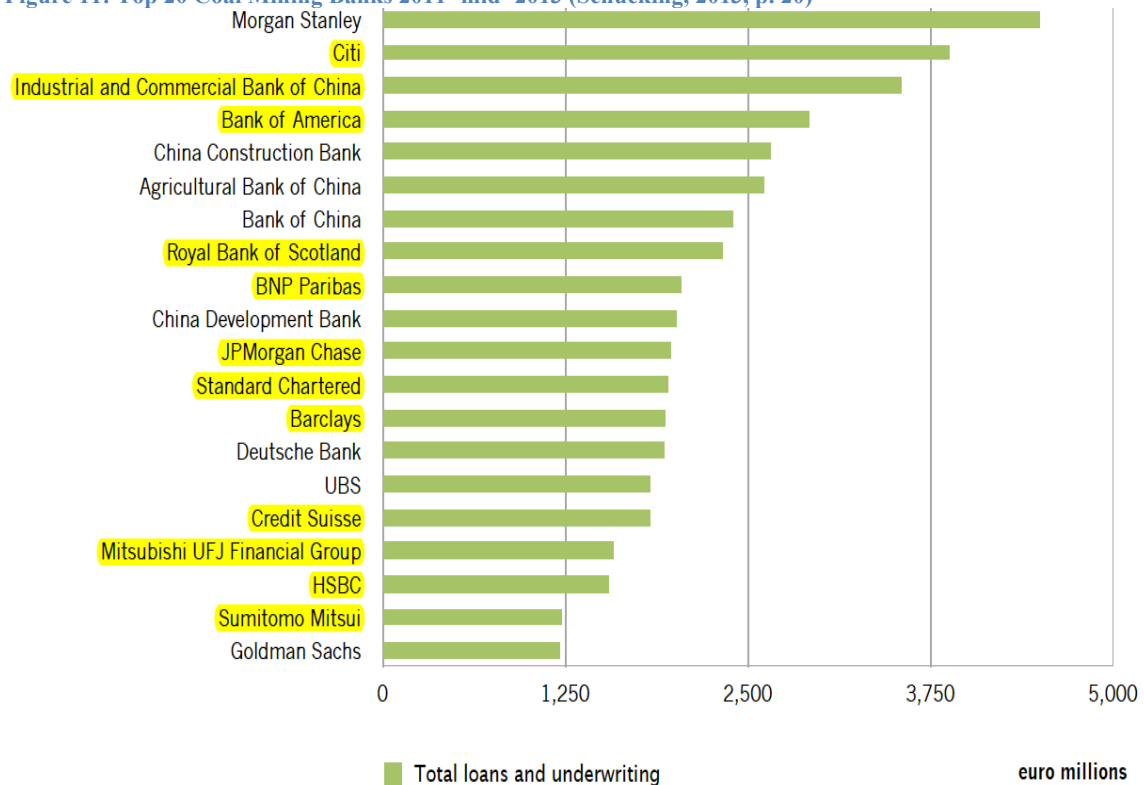
Given the significant advantages of using criteria in case-by-case screening, this approach may suffer from:

- 1) Lack of adequate attention to project-associated GHG emissions; and
- 2) Omission of climate change impacts affecting projects.

Torrance (2014) explains the inadequacy of the EPs' project categorization in considering project-related GHGs through a case study: a "\$2.5 billion petrochemical project was built in an existing, large industrial park in Kuwait including both the development of new plant and the upgrade of existing facilities. Although the IFC guidelines include 'large industrial plants' amongst its examples of Category A projects, on Greater EQUATE, the lenders' technical adviser recommended a Category B classification. The key factor in this decision appeared to be a clarification received from an IFC Principal Environmental Specialist that Category A projects typically involve greenfield constructions, whereas projects being built in existing, large industrial parks were viewed as having less associated risk, making Category B more appropriate" (p. 8). Accordingly, the EPFIs can categorize projects based on their location while ignoring their associated GHGs. That means if the project is not located in greenfield, it can be categorized into the "partial-EIA needed" category. However, the above-mentioned distinction between greenfield and existing development does not make strong sense, because in the context of climate change issues, new emissions occur in either scenario. Furthermore, the IFC's criteria overlook the important fact of climate change impacts on the project during the categorization process. It does not include the project's vulnerability to severe climatic conditions as an element for considering the project under EIA scrutiny.

In order to disclose the likely difficulty of EPIII’s categorization process, I analyze the EPFIs’ reports on their project categorizations against a set of findings publicized by the Bank Track. Schücking (2013) ranks the top 20 commercial banks that have bankrolled the coal mining between 2011 to mid-2013<sup>17</sup>. Figure 11 shows the results obtained by the “Banking on the Coal” study and indicates that over half of the top coal financiers were the EPFIs. If the results of this study are valid, it can be concluded that, during the 30 months under the study, the 12 EPFIs<sup>18</sup> produced high levels of GHGs by investing in coal mining projects.

**Figure 11: Top 20 Coal Mining Banks 2011- mid- 2013 (Schücking, 2013, p. 20)**



<sup>17</sup> The study “covers only a portion of the coal mining industry (70 companies from 2011 – mid-2013) and not the entire sector. A second caveat is that our study does not cover many of the huge infrastructure projects for coal transportation” (Schücking, 2013, p. 14).

<sup>18</sup> The Equator banks considering among top 20 coal mining banks are Citi, Industrial and Commercial Bank of China, Royal Bank of Scotland, BNP, Standard Chartered, Barclays, Credit Suisse, HSBC, and Sumitomo Mitsui.

However, analyzing the project categorization reports of these 12 EPFIs demonstrates a more surprising outcome. Data from this analysis, summarized in Table 6<sup>19</sup>, shows that although these banks were among the top coal mining financiers, majority of the, like Citigroup, Royal Bank of Scotland, Credit Suisse, and Barclays considered minority of their project financing as highly GHG-intensive projects, which should be classified into Category A. Now, the question comes up, how the above-mentioned 12 EPFIs were among the top coal financiers while they financed a negligible number of Category A and B projects, during 2011-2013? This analysis could be a sign to reveal a shortcoming of the project categorization process suggested by the IFC and applied by the EPFIs in considering project-related GHG emissions.

**Table 6: Project categorization of 12 EPFIs among the top 20 coal mining banks.**

Bank	2011		2012		2013	
	A	B	A	B	A	B
Citigroup			0	2	0	1
Industrial and Commercial Bank of China			23	97	30	109
Bank of America	0	1				
Royal Bank of Scotland			0	10	0	8
BNP Paribas			2	10	3	13
JP Morgan Chase						
Standard Chartered	5	26	3	17	9	29
Barclays					7	11
Credit Suisse	4	9	0	7	2	5

<sup>19</sup> The shaded boxes in Table 6 represent lack of available information regarding the project categorization in particular years.

<b>Mitsubishi UFJ Financial Group</b>						
<b>HSBC</b>			10	14	5	17
<b>Sumitomo Mitsui</b>						

In conclusion, although the provided lists and criteria have great utility for project classification, they cannot adequately consider climate change issues as a factor for project categorization. The lack of an explicit requirement to incorporate project-associated GHG emissions and climate change impacts on the project into the categorization adversely affects the likely effectiveness of the EPs in climate change management. It also hinders the EPFIs satisfying shareholders and stakeholders, who need them to reduce climate change impacts on projects and assess associated GHG emissions.

## 6.2.2 Scoping Stage

Under the scoping stage, I analyze how EPIII 1) assesses Scope 1 and 2 GHG emissions, 2) considers GHG emissions during the life of projects, 3) determines the significance of GHG emissions, 4) identifies climate change impact on projects through stakeholder engagement, and 5) considers alternatives in a project’s EIA.

### 6.2.2.1 Assessing project-associated GHG emissions

***Equator Principles III explicitly requires clients and the EPFIs to assess project-associated Scope 1 and 2 as well as direct and indirect GHGs, but it lacks the assessment of consequential emissions.***

Under Annex A: Climate Change: Alternatives Analysis, Quantification and Reporting of Greenhouse Gas Emissions, EPIII explicitly states that “[t]he client will quantify Scope 1 and Scope 2 Emissions” (p. 12). It also requires clients to consider direct and indirect GHGs during project assessment by including them in the definition of Scope 1 and 2 emissions. Exhibit I: Glossary of terms notes: “Scope 1 Emissions are direct GHG emissions from the facilities owned or controlled within the physical Project boundary. Scope 2 Emissions are indirect GHG emissions associated with the off-site production of energy used by the Project” (p. 19). However, EPIII lacks the inclusion of consequential GHG emissions, which might be accounted for significant amounts of project-associated

emissions particularly in “the oil and gas sector”<sup>20</sup>.

Generally, GHG quantification should follow a number of principles intended to ensure that collected information fairly represents projects’ GHG emissions. One of these principles is “completeness”, which places great stress on including all relevant emissions (GG Protocol, 2011). Quantifying all project-associated GHGs is the first step for effective climate change mitigation, which is a tool for satisfying the principles of stakeholder theory. But ignoring the consequential GHG emissions will be a sign of the EPFIs’ inadequate attention to project-associated GHG emissions and then will affect their reputation because of financing in GHG-intensive activities.

#### ***6.2.2.2 Considering GHG emissions during the life of projects***

***Equator Principles III Implementation Note requires the EPFIs to assess GHGs during the construction and operation phases of projects.***

EPIII is relatively ambiguous regarding the domain of GHG assessment; however, its Implementation Note provides a specific requirement for quantifying GHGs over the construction and operation phases of projects. Equator Principles Implementation Note (2014) clearly states that “[a]ll Projects emitting more than 100,000 tonnes of CO<sub>2</sub> equivalent annually (combined Scope 1 and Scope 2 Emissions) during the construction and/or operational phase” are required alternative analysis. According to this statement, clients are required to quantify construction- and operation-associated GHG emissions through the scoping stage of EIA. This comprehensive GHG quantification enables the client to realize which steps of a project require more-stringent mitigation strategies that then will improve the EPFIs reputation.

#### ***6.2.2.3 Determining the significance of GHG emissions***

***Equator Principles III formulates the threshold of 100,000 tonnes of CO<sub>2</sub> equivalent annually (Scope 1 and 2, direct and indirect) to determine the likely significance of projects’ climate change impacts.***

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<sup>20</sup> EPIII states that the oil and gas sector includes offshore Oil and Gas Development, onshore Oil and Gas Development, and Liquefied Natural Gas facilities.

According to EPIII, the EPFIs require clients to assess the significance of projects' climate change impacts determined by quantifying associated GHG emissions and then comparing them with the provided threshold. In 2013, EPIII suggested a specific "threshold" to determine the significance of project-related climate change impacts. It states that "when [project-associated] combined Scope 1 and Scope 2 Emissions are expected to be more than 100,000 tonnes of CO<sub>2</sub> equivalent annually, an alternatives analysis will be conducted to evaluate less Greenhouse Gas (GHG) intensive alternatives" (p. 6). This amount has been introduced as a threshold based on which client can assess the likely significance of project-related GHG emissions in the scoping stage. Prior to EPIII and its recommended GHG threshold, in most cases, the EPFIs had evaluated project-related GHGs with total GHGs of their host countries. They then concluded that these projects would emit only a fraction of host countries emissions and ignored the cumulative impact of GHGs on climate change. Such a statement do not justify that the associated GHGs are insignificant and "not environmentally influential. Also, the small fraction may be just due to comparisons with a large amount of emission inventories that lead to "a scale trick" problem" (Duinker & Greig, 2007, p. 224). For instance, the EIA report of the South Helwan 3x650 MW Supercritical Thermal Power Plant, financed by an EPFI, states that the associated GHGs of the project would be 6,750 kilotonnes of CO<sub>2</sub> equivalent annually, which corresponds to only 4.2% of the total Egyptian CO<sub>2</sub> emissions in 2000. However, this amount of GHGs is more that the annual emission in Iceland, which emitted 4,542,000 CO tonnes of CO<sub>2</sub> equivalent annually in 2010 (Duinker & Greig, 2007). See Table 7. This example highlights the issue of a scale trick, which was occurred among the EPFIs while carrying out the EIA process. The GHG threshold suggested in EPIII helps clients to overcome the scale trick problem, to objectify the context in which judgments about the significance of GHG impacts are made, and to assess the significance of project-associated climate change impacts in light of cumulative impacts of GHG emissions. Consequently, all these benefits can enhance the EPFIs reputation through adequate mitigation strategies.

**Table 7: Parts of the EIA report provided for the South Helwan Thermal Power project**

“Natural gas has been selected as the main fuel for the power plant. Compared to other fossil fuel generating technologies, gas fired steam generators have a relatively low emissions of carbon dioxide (CO<sub>2</sub>), moderate emission levels of nitrogen oxides (NO<sub>x</sub>) and the lowest emission levels (almost traces) of sulfur dioxide (SO<sub>2</sub>) and particulates. Emissions of carbon dioxide are estimated to be up to 6,750 kilotonnes per year (expressed as CO<sub>2</sub>). This assumes that the plant operates for the whole year and consumes around 180 tonnes of gas per hour. The emissions of CO<sub>2</sub> from fuel burning in Egypt amounted to around 160,000 kilotonnes in 2000 (Ref: EEAA: Egypt's Second National Communication). Fuel combustion will account for most of Egypt's CO<sub>2</sub> emissions from all sources. Hence, the power plant as proposed will emit up to around 4.2% of the total Egyptian CO<sub>2</sub> emissions in 2000. This is an upper estimate as the plant will not operate 100% of the year or at full load 100% of the time” (African Development Bank Group, 2011, p. 14).

#### ***6.2.2.4 Identifying climate change impacts on projects through stakeholder engagement***

***Equator Principles III entirely overlooks the assessment of climate change impacts affecting projects and ignores the importance of stakeholder engagement in impact identification.***

Although one of the motivators for the EPFIs to incorporate climate change issues into EIA is to manage credit risk through enhancing the resilience of projects to climate change (Glasson et al., 2005), considering climate change impacts on projects is extremely limited in EPIII. The only reference to climate change adaptation in EPIII is made in Exhibit II: Illustrative List of Potential Environmental and Social Issues to be Addressed in the Environmental and Social Assessment Documentation. Exhibit II states that a project' EIA may assess “viability of Project operations in view of reasonably foreseeable changing weather patterns/climatic conditions, together with adaptation opportunities” (Equator Principles, 2013b, p. 20). However, this statement is neither mandatory as “the list [provided by Exhibit II] is for illustrative purposes only... [and]



[t]he Assessment process of each Project may or may not identify all of the issues listed” (p. 20) and nor requires stakeholder engagement during impact assessment.

Therefore, the EPFIs may face challenges of estimating uncertainty associated with future climatic conditions and cannot ensure that whether their infrastructure development projects will be affected by climate change impacts. Many infrastructure development projects, such as the construction of buildings, highways, and harbors, have relatively long life spans that make them more susceptible to climate change impacts. For example, water scarcity is a potential risk that adversely affects hydropower facilities dependent on levels of annual precipitation and then can reduce their financial revenues. In order to manage credit risks caused by climate change impacts and fulfilling the principles of shareholder theory, the EPFIs should require clients to:

- a) Recognize a project’s climate-sensitive components;
- b) Identify whether climate parameters, which are strongly related to the viability of the project are projected to be changed over the duration of the project; and
- c) Engage stakeholder to enhance their knowledge of local climatic conditions, to reduce uncertainty associated with projected climate change impacts, and to increase the transparency of EIA.

#### ***6.2.2.5 Alternatives analysis***

Consideration of alternatives can make a great progress towards managing climate change issues. It is particularly important to identify and consider alternative options in order to reduce project-associated GHG emissions and increase projects resilience to severe climatic conditions. In this regard, both EPIII and the IFC emphasize the consideration of alternative analysis for GHG-intensive projects. EPIII requires clients to “consider feasible environmentally and socially preferable alternatives” during the assessment procedures (p. 20). The IFC’s Performance Standards state that “[w]here the project ... is likely to generate environmental and social impacts, the identification of risks and impacts will take into account ... alternatives analyses” (p. 9). Accordingly, the EPFIs should require clients to assess and manage project-related climate change issues through the consideration of alternative analysis. In this section, I evaluate the likely

effectiveness of EPIII's and the IFC's policies of alternative analysis against the four criteria:

- 1) Including no-action alternatives,
- 2) Considering multiple alternatives,
- 3) Engaging stakeholder throughout the consideration alternative analysis; and
- 4) Publicizing assessment documentation.

#### ***6.2.2.5.1 Considering no-action alternative***

***Equator Principles III lacks considering the no-action alternative during the EIA process.***

EPIII lacks illustrative statement based on which the EPFIs require clients to consider the no-action alternatives while selecting less GHG-intensive options during the scoping stage of EIA. Even complying with the IFC cannot expect the EPFIs to consider the no-action alternative to be a crucial element of EIA, because “the IFC does not require that a “no-project” scenario be taken into account among possible alternatives” (Morgan, 2007, p. 163). Therefore, although the no-action scenario can define baseline conditions and determine the rate of fluctuation in GHG emissions for a trade-off between potential benefits and environmental degradation caused by projects to minimize project-associate climate change issues, the EPFIs ignore it. Doing so not only may create credit risks casing from vulnerable investments to climate change impacts, but also can affect the EPFIs reputation because of financing in GHG-intensive projects without considering the possibility of the no-action alternative.

#### ***6.2.2.5.2 Considering multiple alternatives***

***Equator Principles III restricts the consideration of multiple alternatives to alternative designs.***

EPIII and the IFC require clients to conduct alternative analysis, but they often focus on alternative design and seem to have overlooked the importance of alternative approaches. Alternative designs are the technically and functionally similar ways that carry out a project. But alternative approaches are methods that are functionally different for achieving the same end (Jones, 1999; Steinemann, 2001). EPIII states that “[f]or Scope 1

Emissions, this analysis will include consideration of alternative fuel or energy sources if applicable” (p. 12). The IFC requires clients to “consider feasible alternative project designs to avoid or minimize physical and/or economic displacement” (p. 33). These statements show that alternative designs, rather than alternative approaches, usually dominate the set of alternatives that the EPFIs require clients to consider during the scoping stage.

For example, in “the construction of a new highway” with an objective of facilitating the transportation between two urban areas, “expanding the closest railway” is an alternative approach to the proposal. This alternative approach can facilitate the transportation while producing a lower level of GHGs than the construction of a new highway. However, since alternative approaches are not clearly suggested in EPIII, the EPFIs do not require clients to consider alternative approaches and allow them to illuminate the railway expansion option from alternative analysis. As such some environmentally sound and less GHG-intensive options may be screened out from further assessment. The EPFIs, therefore, will ignore alternative approaches that might be less GHG intensive and more resilient while are capable of addressing projects’ objectives. This omission in EPIII can impede the EPFIs fulfilling the principles of shareholder and stakeholder theories requiring them to maximize project revenue and consider climate change impacts of investment activities.

#### ***6.2.2.5.3 Engaging stakeholders throughout alternative analysis***

***Equator Principles III does not effectively engage stakeholders during the consideration of alternative analysis.***

EPIII lacks statements that explicitly require stakeholder engagement during alternative analysis. This omission will significantly damage the EPFIs’ reputation and cause credit risk because of:

- 1) Excluding less GHG-intensive options from reasonable alternatives and limiting the domain of reasonable alternatives to “technically and financially feasible and cost-effective options”; and

- 2) Affecting clients' ability to reduce future climatic uncertainty in order to select the most resilient alternative to climate change impacts.

The EPFIs require clients to consider reasonable alternatives and EPIII's Annex A briefly defines reasonable alternatives as "technically and financially feasible and cost-effective options available to reduce project-related GHG emissions" (p. 12). Equator Principle Implementation Note also states that "[t]he alternatives analysis requires the evaluation of technically and financially feasible and cost-effective options available to reduce project-related GHG emissions" (p. 16). The IFC defines these terms. Financial feasibility is "based on commercial considerations, including relative magnitude of the incremental cost of adopting such measures and actions compared to the project's investment, operating, and maintenance, and on whether this incremental cost could make the project nonviable to the client" (p. 10). Cost-effectiveness is defined "according to the capital and operational cost and financial benefits of the measure considered over the life of the measure. For the purpose of this Performance Standard, a resource efficiency or GHG emissions reduction measure is considered cost-effective if it is expected to provide a risk-rated return on investment at least comparable to the project itself" (p. 23).

According to the above-mentioned definitions, EPIII uses economic justifications as a proxy for reasonable alternatives, and by doing so it categorically excludes a consideration of environmental concerns during alternative analysis. The EPFIs then require clients to select feasible alternatives with regard to associated financial returns and based on associated "incremental cost", they do not expect them to necessarily consider less GHG-intensive alternatives. EPIII in this context is somewhat vague and does not provide clients with the clarification of the appropriate level of external cost while most of green energy and renewable sources are relatively expensive. The lack of clarification for determining the extent to which clients are allowed to consider an alternative as a cost-ineffective option may lead to the selection of alternatives that only ensure financial returns but produce significant amounts of GHGs. It is important that any factor used in alternative analysis not be permitted to pre-empt the values the EIA that is intended to assess and manage project-associated climate change impacts.

Moreover, lack of stakeholder engagement during alternative analysis can adversely affect the EPFIs' financial profits due to inadequate adaptation strategies. Since stakeholders are a potential source of valuable local knowledge (Byer & Yeomans, 2007), their engagement during alternative analysis can help clients reduce the uncertainty associated with changes in climatic conditions and select options more resilient to climate change impacts. Stakeholder engagement can also help to build consensus for the preferred alternative, particularly, when the proposed project is potentially controversial due to the level of GHG emissions (Desmond, 2007). Doing so can increase projects' resilience, and consequently minimize potential credit risk caused by climate change impacts.

#### ***6.2.2.5.4 Disclosing the result of alternative analysis***

***Equator Principles III does not require the EPFIs to publicly disclose the alternatives analysis assessment or its detailed technical information.***

Given the importance of publicizing alternative analysis, there is an inherent lack of publicly disclosed information (Hardenbrook, 2007). EPIII states that “[i]n some circumstances, public disclosure of the full alternatives analysis ... may not be appropriate” (p. 12). The Equator Principles Implementation Note (2014) declares that “[t]here is no requirement to publicly disclose the alternatives analysis or detailed technical information” (p. 16). It indicates that “public disclosure of the details contained in the full alternatives analysis may not be appropriate, for example where the analysis includes business confidential, commercially sensitive or proprietary information” (p.16). Therefore, based on “appropriate confidentiality considerations” the EPFIs do not require clients to publicize:

- 1) Criteria used to select the preferred alternative;
- 2) Why other alternatives are not being considered in detail;
- 3) Methods for comparing alternatives; and
- 4) How identified climate change issues including project-related GHG emissions and climatic impacts on projects can be addressed by implementing the preferred alternatives (Posas, 2011).

But “this caveat [appropriate confidentiality considerations] is a hindrance to disclosure and transparency” (Mikadze, 2012, p. 1406) and the EPFIs can “hide behind excessive interpretations of ‘client confidentiality’ to withhold information to stakeholders and the public” (Bank Track, 2011, p. 5). Lack of transparency in publicizing the results of alternative analysis can undermine the credibility of decisions made by EPFIs seeking to legitimize their investment activities through the implementation of EIA.

## **6.2.3 Decision-Making Stage**

### ***6.2.3.1 Integrating the results of the EIA report in final projects***

***Equator Principles III provides no guidance on how the results of project assessment are to be integrated into final projects.***

The EPIII is relatively vague and lacks decisive benchmarks for the incorporation of the results of EIA into final decision-making. EPIII fails to acknowledge the importance of implementing preferred options selected during alternative analysis and provides no guidance on how significant adverse environmental effects are to be justified. EPIII does not provide clients with further procedural information on complying with mitigation and adaptation strategies recommended in the EIA report, and then, clients fail to provide a rationale for their conclusion that project-associated GHG emissions would be insignificant or final projects are resilient to climate change impacts.

By doing so, the EPFIs do not require clients to be accountable to the public and increase the transparency of their decision-making process through justifying the selection of final projects based on the EIA report and publicizing their rationales for final projects. Doing so sabotages the EIA’s goal of increasing the transparency of decisions made by the EPFIs and affects their legitimacy supposed to be enhanced through the implementation of EIA. EPs do not actually have a public statement that says this is the way how projects have been justified,

## **6.2.4 Follow-up and Reporting Stage**

The follow-up stage serves to monitor the compliance of projects with the EIA report and to evaluate the effectiveness of recommended mitigation and adaptation strategies. It is an important step towards fulfilling the principles of shareholder, stakeholder, and

institutional theories. Project monitoring and then publicizing its result enable the EPFIs to manage their credit and reputational risks, as well as enhancing their legitimacy.

#### **6.2.4.1 Monitoring projects' GHG emissions**

***Equator Principles III requires client to monitor project-associated GHGs, but limits the domain of GHG monitoring and restricts its disclosure.***

EPIII states that “[t]he EPFI will require the client to report publicly on an annual basis on GHG emission levels (combined Scope 1 and Scope 2 Emissions) during the operational phase for Projects emitting over 100,000 tonnes of CO<sub>2</sub> equivalent annually” (p. 12). This public reporting can represent the EPFIs with a positive CSR image (Kass & McCarroll, 2006). However, Equator Principles Implementation Note limits the domain of the GHG reporting and emphasizes “the Reporting is undertaken for the operational phase of the Project (i.e. following Project completion) over the life of the loan (i.e. whilst repayments are being made). If the EPFI is financing the construction phase of the Project only but the life of the loan (i.e. repayments are being made) continues into the operational phase, the client would also be required to report on the Project’s GHG emissions during the operational phase” (p. 16). The second challenge of EPIII’s GHG reporting is the conditional disclosure. EPIII states that “[i]n some circumstances, public disclosure of ... project-level emissions may not be appropriate”. The Equator Principles Implementation Note also declares that “[c]lients may be exempt from public reporting where the client’s business confidentiality or propriety information prevents reporting, or reporting may present a competitive disadvantage to the client” (p. 18).

This specified boundary limits GHG quantification to the operational phase, and consequently, allows the EPFIs to neglect GHGs emitted during the construction phase. Since parts of project-related GHGs are produced during the construction phase, any oversight in monitoring them can lead to inaccurate project assessment and inadequate mitigation strategies. This problem will become worse if a significant amount of GHGs are produced during the construction phase. For instance, in concrete projects such as transportation systems and dams, considerable amounts of project-associated GHGs are emitted in building constructions. Chester & Horvath (2008) thoroughly assess and

compare the amount of GHG emissions during the life cycle of a rail transportation projects. This study clearly reveals that significant amounts of the rail transportation project's GHG emissions are produced in the construction phase. This problem is likely similar in concrete dam projects. A report on Conawapa Generation Station shows that this project will produce approximately 900,000 tonnes of CO<sub>2</sub>e over its 100-year life. The construction phase, including building material-manufacture, on-site activities, and transportation, is responsible for the majority (86%) of life-cycle GHG emissions. However, GHG emissions produced during the operation phase (the production of replacement equipment, and recycling and transportation of damaged or worn steel components) are responsible for only 1% of projected GHG emissions (Manitoba Hydro, 2013).

Limiting GHG monitoring to the operational phase, particularly for dam projects, adversely affects the likely effectiveness of the EPs in addressing climate change issues and reduces the EPFIs' ability to consider mitigation strategies. The Bank Track website lists 15 "dodgy deals" associated with dam projects, half of them, including the Agua Zarca dam, Belo Monte dam, Barro Blanco, Ilisu dam, Nam Theun 2 dam, Rio Madeira dam, and Theun-Hinboun dam expansion, financed by the 18 EPFIs<sup>21</sup>. Based on this report, almost one-fourth of the EPFIs cannot effectively mitigate climate change impacts because EPIII does not require clients to quantify and then report on construction phase-associated GHGs. Doing so impedes the EPFIs adequately implement mitigation strategies and affects their reputational worth assigned to them (Christopher, 2007). If the EPFIs seek to enhance their reputation by assessing project-associated GHGs, they should necessarily monitor emissions throughout the life of projects. Otherwise, stakeholders may accuse the EPFIs of conducting incomplete project assessment, implementing inadequate mitigation strategies, and financing in GHG-intensive projects. Furthermore, similar to alternative analysis, restricting the disclosure of GHG reporting because of "appropriate confidentiality considerations" can reduce the EPFIs transparency, and consequently affect their legitimacy (Hardenbrook, 2007; Mikadze,

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<sup>21</sup> ABN, FMO, Banco do Brasil, CAIXA Economica Federal, JPMorgan, ANZ, Bank of Tokyo-Mitsubishi UFJ, BNP Paribas, Citigroup, KBC Group, Banco Bradesco, Itaú Unibanco, Sumitomo Mitsui Banking Corporation, Standard Chartered, Crédit Agricole Corporate and Investment Bank, ING Bank, Banco Santander, and Société Générale.



2012).

#### 6.2.4.2 Monitoring projects vulnerability to climate change impacts

*Equator Principles III lacks any requirement to monitor project vulnerability to climate change impacts, update information concerning climatic conditions, and publicize the result of the monitoring.*

EPIII makes no attempt to monitor projects from the climate change adaptation perspective and to publicize the result of project monitoring. The EPFIs do not require clients to monitor projects' vulnerability to climate change impacts and engage stakeholder to reduce uncertainty associated with climatic conditions in order to implement adequate adaptation strategies. This inadequate attention to climate change adaptation affects the EPFIs' ability to enhance project resilience and manage credit risk imposed by climate change impacts on projects. Undermining the project monitoring and disclosing its result can also reduce the transparency of EPFIs' decision-making and affect their legitimacy. The EPFIs then need to monitor their investments, publicize the results of the monitoring, and engage stakeholder to select adequate adaptation strategies.

### 6.3 Summary

This analysis assesses the EPIII's policies for incorporating climate change issues into EIA against the 13 criteria (Table 8). It provides frameworks for exploring the likely effectiveness of EPIII's EIA process in addressing climate change issues through examining whether they can enable the EPFIs to fulfill the principles of shareholder, stakeholder, and institutional theories, as well as to satisfy the motivators of credit, reputation, and legitimacy risk management.

**Table 8: Qualitative assessment of EPIII's requirements to incorporate climate change into EIA**

Criteria	Strong	Partially	Weak
1) Describing project & stakeholder engagement			✓
2) Categorizing projects		✓	
3) Assessing project-associated GHGs		✓	
4) Accounting GHG produced during the life of projects	✓		
5) Determining the significance of GHGs	✓		

6) Identifying climate change impacts on projects & stakeholder engagement			✓
7) Considering no-action alternatives			✓
8) Considering multiple alternatives		✓	
9) Engaging stakeholders			✓
10) Disclosing alternative assessment			✓
11) Integrating results of EIA in final projects			✓
12) Monitoring project-related GHGs		✓	
13) Monitoring project vulnerability			✓

## Chapter 7: Discussion and Conclusion

### 7.1 Contribution of Research

The Equator Principles (EPs) are the international framework for environmental and social risk management and are “covering over 70 percent of international project finance debt in emerging markets” (EPs-website). Among socio-environmental risks, climate change is an increasingly important global issue that adversely affects economic activities and reduces project revenues (IPCC, 2013b). As for climate change, the latest revision (EPIII) comprises a series of modules containing information to assess project-related climate change issues and to support the implementation of the requirements for climate change management. Clients, for example, need to consider more energy-efficient alternatives to GHG-intensive projects. Projects annually produced over 100,000 tonnes of CO<sub>2</sub> should also comply with disclosure rules (Equator Principles, 2013). Despite the development of EPIII, its climate change policies are left vague, and different opinions have evolved around the likely effectiveness of the EPs in addressing climate change issues

Joseph Huang, President of E.Sun Bank, notes that: “EPs will enhance environmental and social assessment processes for project finance loan evaluation, to ensure the approved loan project will not have significant potential risk or negative impact on the environment and society”. However, Dustin Neuneyer, head of sustainability management at German-based bank Portigon, says "If it's not possible to agree with all members on a standard that substantially commences a change of business as usual, then an alternative might be to state explicitly that climate change risks are not addressed in the principles". Debate, therefore, continues whether the EPs’ climate change policies can effectively address climate change issues with the project-financing sector or are a mere window-dressing policies and will not lead to any climate change management.

The analysis in this study goes beyond existing discussions criticizing the EPs based on their voluntary nature, and assesses the likely effectiveness of EPIII’s climate change policies throughout primary document and policy analysis, as well as comparative legal

and synthetic analysis. To do, this study makes three major contributions: theoretical contribution by examining underlying theories and motivators for the Equator Principles Financial Institutions (EPFIs) to integrate climate change issues into EPs; analytical contribution by developing a set of generalized criteria for the incorporation of climate change issues into EIA; and synthetic contributions by examining the likely effectiveness of EPIII's climate change policies against the theories and criteria.

### **6.1.1 Theoretical Discussion**

As noted in Chapter 4, shareholder, stakeholder, and institutional theories shape the commercial banks' behaviors towards formulating the EPs to integrate sustainable practices into their investment portfolios. The Equator Principles Financial Institutions (EPFIs) developed the EPs to positively respond to the pressures exerted by shareholders seeking revenue maximization, stakeholders requiring environmental consideration, and institutional environments promoting corporate responsibility. Consequently, the EPs were a significant step to facilitate sustainable development while thereby meeting the principles of the underlying theories.

First, in the project-financing sector, most of the investment activities are linked directly to environmental resources and need natural capital for construction and operation phases. Thus their expected financial revenues are mainly dependent on the level of energy efficiency. Second, commercial banks were providing loans to facilitate infrastructure development projects damaging the local areas in which they operated, creating socio-environmental impacts that were left for stakeholders in those areas to contend with. Third, in the project-financing sector, key actors such as the World Bank and IFC have already formulated a set of rules on sustainable investment that reveal a growing consensus on the importance of sustainable practices in this institutional environment. This environment affects the decision of managers by focusing their attentions towards issues relevant with sustainable development. Therefore, to increase shareholders' benefits, consider stakeholders' interests, and comply with institutional environments, the EPFIs developed the EPs to integrate sustainability issues into their investment decision-making. Through the implementation of EPs: efficiency in operations will be increased, project-associated environmental issues will be addressed,

and legitimacy of the EPFIs will be enhanced (Amalric, 2005; Equator Principles, 2006; Torrance, 2014; Wright & Rwabizambuga, 2006).

However, climate change issues create additional challenges for the EPFIs and impede their sustainable development practices. The long-lasting relationship between sustainable development and climate change emphasizes a need for the development of policies that simultaneously address these issues. At first impression, climate change policies would be against a private financiers' goal of maximizing shareholder profits, but the development of the EPs' climate change policies can provide the EPFIs with an empowerment potential for managing their credit and reputational risks as well as improving their legitimacy.

Climate change can impact asset values, reduce projects' expected revenues, and then adversely influence the EPFIs' financial viability (Stern, 2006). Climate change issues can also cause reputational risk when involved stakeholders believe that the EPFIs have failed to meet their expectations regarding project return and environmental protection. Besides the influence of credit and reputational risks motivators for the EPFIs to consider climate change due diligence, ethical expectations affecting banks legitimacy motivates the EPFIs to integrate institutional interests into their corporate practices. The EPFIs are responsible to ensure shareholders' benefits by managing credit risk, consider stakeholders' interests by addressing project-associated environmental risks, and respond to institutional environments by practicing CSR. In so doing, the EPFIs incorporate climate change issues into the EIA process suggested in EPIII to manage credit, reputational, and legitimacy risks caused by climate change. EIA is considered as a method for incorporating financial, social, and ethical concerns into decision-making process, and thus is placed within the context of sustainable development (Glasson et al., 2005).

### **7.1.2 Analytical Discussion**

As canvassed in Chapter 5, I develop a set of generalized criteria for effective climate change management throughout EIA. These criteria were developed through the comparative legal analysis on best practice policies providing clear guidelines on

incorporating climate change into EIA, considering both mitigation and adaptation issues, and implementing in developed and developing countries. Each of these criteria seeks to fulfill the underlying theories and satisfy the motivators described in Chapter 4 while seeking climate change management within the project-financing sector. For example, assessing project-associated GHG emissions enables the financial institutions to mitigate climate change issues, to fulfill the principles of stakeholder theory, and to satisfy the motivator of reputational risk management. On the other hand, considering projects' vulnerability to severe climatic conditions helps the financial institutions to manage their credit risk and positively respond to shareholders by applying climate change adaptation strategies. Justifying final projects and implementing adequate mitigation and adaptation measures based on EIA's reports in the decision-making stage empower the institutions to increase their transparency and gain legitimacy.

The 13 criteria developed in Chapter 5 contribute to the new governance literature by identifying integral issues that should be adopted in any voluntary environmental initiatives and soft law seeking climate change management within the project-financing sector. The developed criteria can offer practical guidelines comprising of key issues that climate change policies should include in the screening, scoping, decision-making, and reporting stages of EIA. The 13 criteria authorize financial institutions instead of adopting cost-intensive climate change policies, comply with policies implementing mitigation and adaptation measures thereby they can minimize credit risk, enhance reputations, and gain legitimacy.

### **7.1.3 Synthetic Discussion**

The research proposition for this thesis was that the EPFIs are managing climate change issues through the steps they are taking to incorporate climate change issues into the EIA process. EPIII emphasizes the importance of climate change due diligence and provides a number of provisions for climate change management and requires the EPFIs and clients to consider climate change due diligence during their project-financing activities. Moreover, the EPFIs state that “[w]e recognise the importance of climate change ... and believe negative impacts on the climate should be avoided where possible”. At first glance, it might conclude that the EPs' climate change policies are leading toward greater

climate change management within the project-financing sector.

However, this conclusion is changed by the findings from policy analysis on the EPs' documents canvassed in Chapter 6. By assessing the EPIII's climate change policies against the criteria developed, I concluded the following: among the underlying theories shaping the EPFIs' behaviors towards sustainable development and motivators encouraging EPFIs to manage climate change issues, the EPFIs develop EPIII's climate change policies primarily for reputational risk management through climate change mitigation. This study concludes that, despite challenges regarding climate change mitigation, the EPs clearly have improved the situation by formulating a specific threshold for GHGs assessment and quantifying GHGs during the life of project (i.e., construction and operation).

Findings of Chapter 6 lead to questions surrounding the effectiveness of EPIII's climate change policies, which are also supposed to manage credit risk and enhance legitimacy. Effective climate change management throughout the EIA process requires integration of mitigation and adaptation strategies, as well as disclosures. Therefore, although reputational risk management is among the motivators of the EPFIs to address climate change issues, EPIII should consider adaptation strategies and disclosures. On this point, it is submitted here that there is a strong requirement to improve EPIII's climate change policies, if the EPFIs seek to simultaneously manage credit, reputational, and legitimacy risks.

#### ***7.1.3.1 Commentary on the EPs' climate change policies***

As discussed in Chapter 6, there are serious concerns regarding the likely effectiveness of the EPs' climate change policies. The omission of climate change adaptation and the lack of full disclosure, as well as inadequate consideration of project-related GHGs, make it difficult to substantiate claims about the effectiveness of EPs' climate change policies. This thesis shows that many of the criteria developed have not been met by these policies, and thus there is room for improvement to EPs, particularly in the areas of climate change adaptation and transparency. As mentioned above, worries about ineffective adaptation mechanism arise in the context of the EPs because no procedures monitor and scope

climate change impacts on projects, and then monitor the practices of adaptation strategies. This implies that the EPFIs are likely to face a range of credit risk because of financing vulnerable projects. Moreover, lack of transparency in decision-making process and publicizing the results of alternative analysis and project monitoring pose a substantial threat affecting the EPFIs' legitimacy. One positive development identified in Chapter 6 is EPIII's climate change mitigation policy requiring the consideration of GHGs during the life of projects and formulating a specific threshold for GHGs assessment. But, this policy still faces some challenges of ignoring project-associate consequential GHGs. Therefore, EPIII's climate change policies need major developments and I provide a set of commentaries on mitigation, adaptation, and disclosure policies.

#### **7.1.3.1.1 Screening**

To effectively incorporate climate change issues into the screening stage of EIA, EPIII should:

- Emphasize the importance of stakeholder engagement in defining a project's objective, thereby the likely effectiveness of alternatives analysis will be increased by including less GHG-intensive and more resilient options into feasible alternatives; and
- Assess project-associated GHGs and climate change impacts on projects as factors for project categorization. Doing so helps clients consider both mitigation and adaptation measures during the preliminary step of EIA, and enables the EPFIs to reduce credit and reputational risks caused by climate change issues.

#### **7.1.3.1.2 Scoping**

Throughout the scoping stage, EPIII should require clients to:

- Quantify consequential GHG emissions of proposed projects in order to consider stakeholders' interest in managing project-associated GHGs;
- Identify potential climate change impacts on proposed projects to manage potential credit risk;
- Engage stakeholders to minimize uncertainty surrounding the future climatic conditions;



- Consider the no-action alternative, which defines climate-change baseline condition and is the first step to compare feasible alternatives from climate change perspective;
- Identify alternative designs such as considering different energy sources in order to select a less GHG-intensive option; and
- Disclose the results of alternative analysis to explain:
  - Which criteria have been used to select the preferred alternative;
  - Why other alternatives are not being considered; and
  - How identified climate change issues including project-related GHG emissions and climatic impacts on projects can be addressed by implementing the preferred alternatives.

#### **7.1.3.1.3 Decision-making**

Decision-making stage is an integral step that can enable the EPFIs to fulfill the principles of institutional theory and enhance their legitimacy. To this end, the EPIII should:

- Provide decisive benchmarks for the incorporation of the results of EIA into final decision-making;
- Supply clients with further procedural information on complying with mitigation and adaptation strategies recommended in the EIA report; and
- Require clients to be accountable to the public and increase the transparency of their decision-making process through justifying their rationales for the conclusion that project-associated GHG emissions would be insignificant or final projects are resilient to climate change impacts.

#### **7.1.3.1.4 Monitoring**

Throughout the monitoring stage, the EPFIs can manage credit and reputational risks while enhancing their legitimacy. EPIII should require clients to:

- Include consequential GHGs in project assessment and expand the domain of project monitoring to the entire life of projects;
- Monitor project vulnerability to climate change impacts and update information concerning severe climatic conditions; and

- Publicize the results of project monitoring.

## 7.2 Further Area of Research

There are two main areas of research that stem from this study: 1) Enhancing the credibility of developed criteria and 2) analyzing the EPFIs' procedural mechanisms for implementing EPIII's climate change policies.

First, the criteria developed for the effective incorporation of climate change issues into EIA are possible areas of future study. Further research could be done to enhance the credibility of these criteria by analyzing more climate change policies and providing technical details on how to carry out each criterion. In this study only 21 sets of policies were reviewed and the domain of key issues is restricted to 13 criteria, but future study can analyze more policies and provide more comprehensive guidelines for the incorporation of climate change issues into EIA. Analyzing additional policies would support existing criteria and consider other issues that should be included to effectively manage climate change issues. Further research is also necessary to supply the technical details of developed criteria, and how each criterion should be carried out throughout the EIA process. For example, it would be insightful to research the possibility of different methods for GHG accounting and publicizing the results of project monitoring. Doing so would provide policy makers interested in the future of climate change policies with more in-depth procedural mechanisms required for effective climate change management.

Second, to comprehensively assess the likely effectiveness of the EPIII's climate change policies, it would be useful to examine that how the EPFIs implement these policies. Given the challenges of climate change management identified in this study, investigating procedural mechanisms through which the EPFIs implement the EPIII's-related policies is crucial for comprehensive evaluation of EPIII's climate change policies. Doing so may provide information to examine whether the EPFIs' internal procedures can undermine the effectiveness of EPs' climate change mitigation or can enhance the effectiveness of their climate change adaptation and disclosure.

### **7.3 Concluding Remarks**

This study suggests that the EPIII's climate change policies can relatively meet the principles of stakeholder theory, but they fail to fulfill shareholder and institutional theories. It also indicates that the EPIII's climate change policies have primarily been developed to manage reputational risk and cannot satisfy the motivators of credit and legitimacy risks. The EPs, therefore, need to require clients to consider climate change impacts on projects, include consequential GHGs into project assessment, and publically disclose the EIA report and the results of project monitoring. They can enable the EPFIs to manage credit and reputational risks caused by climate change issues and enhance their legitimacy through practicing CSR. This study suggests that the EP should clearly include these mandates in their provisions and require the EPFIs and clients to comply with them in project assessment. Additional research (i.e., analyzing additional best practice policies and investigating the EPFIs' procedural mechanisms) should also be undertaken to enhance the credibility of developed criteria and assess comprehensively the likely effectiveness of the EPs' climate change policies in light of the EPFIs' compliance procedures.

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## Appendix 1- Policies Analyzed

### Unites States

*Revised Draft Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews, 2014*

*Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions, Council on Environmental Quality, 2010*

*Sustainable Facilities Tool: Climate Adaptation, Sustainable Facilities Tool, 2012*

*CEQA Guidelines Amendments, California Natural Resources Agency, 2009*

*CEQA Air Quality Guidelines and Adopted Air Quality CEQA Thresholds of Significance, Bay Area Air Quality Management District, 2010*

*Alternative Approaches to Analyzing Greenhouse Gas Emissions and Global Climate Change in CEQA Documents, Association of Environmental Professionals, 2000.*

*CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act, by California Air Pollution Control Officers Association (CAPCOA), 2008*

### Canada

*Incorporating Climate Change Considerations in Environmental Assessment: General Guidance for Practitioners, The Federal-Provincial-*

*Territorial Committee on Climate Change and Environmental Assessment (Canada), 2003*

*Guide to Considering Climate Change in Environmental Assessments in Nova Scotia, Nova Scotia, Nova Scotia Environment, 2011*

### **European Commission**

*Guidance on Integrating Climate Change and Biodiversity into Strategic Environmental Assessment, European Commission, 2013*

*Report on the application and effectiveness of the Environmental Impact Assessment Directive, European Commission, 2009*

### **Australia**

*Northern Territory Government Environmental Impact Assessment Guide: Greenhouse Gas Emissions and Climate Change, Department of Natural Resources, Environment, the Arts and Sport of the Northern Territory Government, 2009*

### **Netherlands**

*The NCEA's Recommendations on Climate Change in Environmental Assessment, Netherlands Commission for Environmental Assessment (NCEA), 2009*

### **New Zealand**

*Climate Change Effects and Impacts Assessment: A Guidance Manual for Local Government in New Zealand, Ministry for the Environment, 2008*

### **Spain**

*Spanish National Climate Change Adaptation Plan, Spanish Ministry of Environment, 2006*

**Jamaica**

*Natural Resources, Environmental Management, Hazard Risk Reduction and Climate Change, Jamaican Ministry of the Environment, 2009*

**Kiribati**

*Adaptation Handbook: Undertaking Risk Treatment for Coastal Climate Change Risks in the Republic of Kiribati, C. Elrick & R. Kay, prepared for the Kiribati Adaptation Project Phase II (KAP II), Government of Kiribati, 2009*

**Caribbean Community and Common Market (CARICOM)**

*Guide to the Integration of Climate Change Adaptation into the Environmental Impact Assessment (EIA) Process, 2004*

**Caribbean Development Bank**

*Sourcebook on the Integration of Natural Hazards into the Environmental Impact Assessment Process, Caribbean Community Adaptation to Climate Change in the Caribbean (ACCC) Project and the Caribbean Development Bank, 2004*

**The World Bank**

*World Bank Group Development and Climate Change: A Strategic Framework for the World Bank Group, The World Bank, 2008*