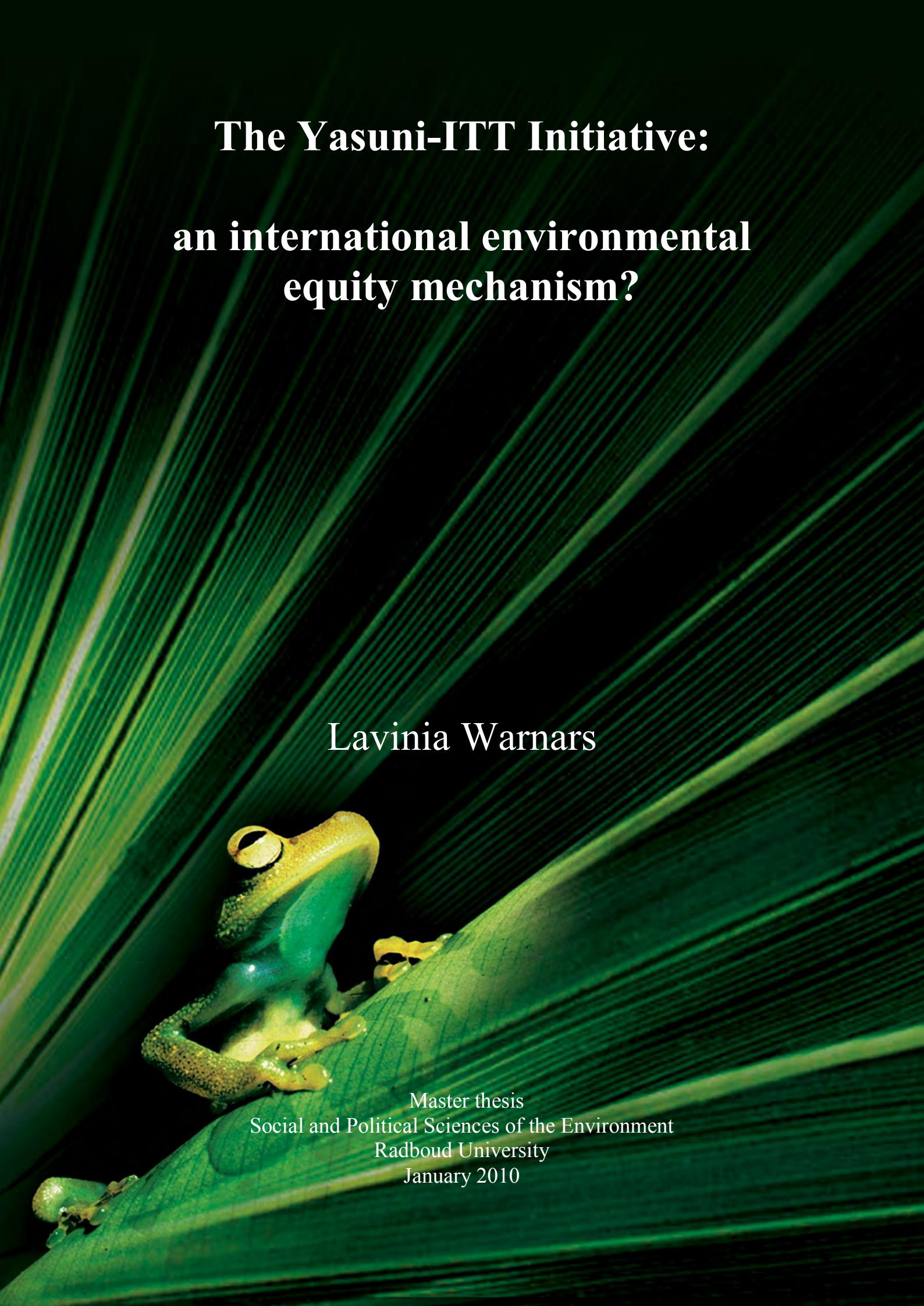
The Yasuni-ITT Initiative:

an international environmental equity mechanism?

Lavinia Warnars



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„Environmental quality is a central aspect of wellbeing for individuals and communities,
and it is therefore a critical question for justice"

(Low and Gleeson, 1998, p. 102).

"The earth is not dying,
she is being killed.
And the people who are killing her
Have names and addresses."

-U. Utah Philips

Preface

Throughout this study, I have learned much about myself, my interests, the environment and people. My experience during studying at the University of Tennessee in Knoxville, USA, has inspired me for the topic of this research: critical theory and environmental equity. This inspiration came through Professor Michael Skladany and his course of Power and Society in which the radical prison, black, and environmental justice movements were discussed in relation to theories of Marx and Foucault. I became aware of the fact that in the USA, racism was still apparent, and has shaped environmental related issues. Back in the Netherlands, I remained interested in power and justice related issues. It was clear: I needed to do my masters research related to a global scale, climate change, power and justice. Fortunately I was able to contact a person who is familiar with such issues, especially with the latter: Roldan Muradian. He advised me to read an article about the Yasuni-ITT Initiative from Joan Martinez-Alier. In addition, Muradian was on good terms with Carlos Larrea, the technical advisor of the Yasuni-ITT Initiative. The latter contacted to arrange to go to Ecuador. From one came another and my time in Ecuador was very interesting and exciting as I became one of the „stakeholders" of the Yasuni-ITT Initiative by contributing to the final document.

Conducting the research and writing this thesis has been an eye-opener and a challenging task which triggered my intellect, as well as my own human development. Furthermore, personally, I always need to do more than just research: I need to act upon my thoughts, my findings through the research, and my ideals, which I all did with great passion in Ecuador and in the Netherlands. As all personal interests cannot be taken into account with a single master thesis, and one needs to stop searching at one point, as my thesis supervisor professor Pieter Leroy pointed out many times, this thesis has been a study of progress, development, and a quest for comprehensive research, which does not end with this writing text.

I particularly thank my thesis supervisor Professor Pieter Leroy, for all the support, patience, advice, critique and complements. Furthermore, my sincere gratitude goes to Carlos Larrea, with whom I did my research project in Ecuador and with whom I henceforth worked with intensively. In addition, I would like to thank Roldan Muradian for his support and trust.

I would like to thank all of those who had the patience and interest to conduct an interview with me for my research. In addition, I have met several through the interviews, who have given me the opportunity to work further with the Yasuni-ITT team, for which I'm very grateful. Furthermore, I would like to thank David Romo of the University of San Francisco (USF) in Quito, who opened my eyes in many ways and organised my stay at the Tiputini Biodiversity Station of the USF in Yasuni.

Gautam Dutt, the Editor of Elsevier Energy and Sustainable Development, has my sincere gratitude as well, since he made it possible for me and Carlos Larrea to publicize an article, my first, in such a magazine. Additionally, I would like to thank those who emailed my back from over the world with comments and critiques upon the initiative and my own research.

Important during my time in Ecuador were the friendly contacts in the country and from abroad and I would like to thank them all for supporting me.

I would like to thank friends and family supporting me in the Netherlands not only with my thesis, but also in life through dinners, sports, drinks, dancing, and more. I would like to thank Allard, Monique, Tijn, Julie and particularly for their hospitality and love by taking me in their home and holding me back from my continuous urge to go beyond my limits. Also Markus: thank you for your support in Colombia, as I was unable to be on my feet with my ankle and needed a good break of Ecuador. I would like to thank separately Milo, Monique, and Hylke for their efforts to criticize and correct my thesis.

Al fine, pero molto importante: Massi: mille grazie per tuo amore, per stare con me negli miei male tiempi e per tua patienza. Tu sei tutto per me, anche quando non siamo insieme.

Summary

As of 2010, industrialized countries who rectified the Kyoto Protocol did not meet their greenhouse gas (GHG) emission targets, not even with the „off-set" investments in developing countries through the Clean Development Mechanism (CDM). The CDM aims at investing in sustainable development projects in developing countries through finances of Annex I (industrialized countries) who in turn, earn credits which they can use to off-set their GHG emission targets. However, the CDM has been criticized heavily with regards to environmental integrity, sustainable development, technology transfer and justice issues. Furthermore, as GHG emissions are currently growing, the new climate change protocol (Kyoto Protocol expires in 2012) will include a GHG abatement mechanism for developing countries: Reduction of Emissions of Deforestation and Degradation (REDD), as such efforts are cost-effective and efficient. However, also this mechanism may face problems related to equity in terms of indigenous people and their rights. Some other countries have proposed other mechanisms to combat or adapt to climate change, including developing countries such as Ecuador.

Ecuador, a less developed country in South America, remains depending on petroleum exports, which have not led to economic growth and diversification, did not reduce poverty and inequality, but had strong environmental impacts. However, as large petroleum reserves were confirmed in the Yasuni National Park of Ecuador, one of the most biodiverse hotspots in the world, Ecuador has proposed to indefinitely keep almost a billion barrels of petroleum underground, if the international community contributes with at least half of the opportunity cost of exploiting the petroleum. An internationally administrated fund with UN participation will be created and invested exclusively in conservation, renewable energy and social development. The proposal has already received significant support from international institutions, European governments, NGOs and personalities worldwide.

Given the limits of petroleum reserves, the Yasuni-ITT initiative opens alternatives towards sustainable development in the country, allowing a transition towards a post-petroleum society, and promoting ways towards human development within the limits of biodiversity conservation. This proposal, which can be replicated by other developing countries with fossil fuel reserves in biodiverse areas, may open new alternatives for post-Kyoto negotiations with binding commitments for several developing countries, and simultaneously addresses global warming, biodiversity loss, and poverty.

This thesis aims at analysing and assessing whether the Yasuni-ITT Initiative can be considered as an alternative pilot project to address not only environmental and climate justice, but also power imbalances. Current and proposed climate change mechanisms such as the CDM and REDD, as well as the history of Ecuador are being examined as motivations of the initiative. Such motivations include injustice aspects as well as how the petroleum industry has affected the country severely in terms of environment, society, economy and politics. These motivations and the Yasuni-ITT Initiative are therefore carefully examined in relation to environmental and climate justice as well as power imbalances. This objective is laid out in two main research questions:

1. *To what extent, and based on which motivations, does the Yasuni-ITT Initiative address environmental and climate justice and power imbalances?*

2. *Can the Yasuni-ITT Initiative be perceived as an alternative pilot project which addresses environmental and climate justice, as well as power imbalances?*

Different theories regarding power imbalances, environmental justice and climate change justice are explored. However, as it became apparent that environmental and climate justice are difficult to define as it is more a philosophical term, equity has been used instead of justice. The theories being explored, include: critical theory (Marxism) in which power structures are relevant to examine; arguments for equity in relation to which groups of society need to be protected; environmental equity with intergenerational, all species and international components; peripheralization with which the allocation of environmental damaging industries in marginalized areas are being criticized; and climate equity which is a relative new concept and examines different approaches and principles of how climate mechanisms are constructed in relation to equity. With these theories, evaluation criteria are created to evaluate the different climate change mechanisms on equity issues.

This qualitative research encompasses a single case study, being Yasuni-ITT. However, other climate change mechanisms are been taken as motivations for the creation of the single case (Yasuni-ITT Initiative). In addition, this study is characterised by using both ex post and ex ante evaluations as some climate change mechanisms or aspects of them are already in practice, and some mechanisms or aspects are not yet. It is important to mention that the philosophical background of critical theory ,used for this research, influences the research methods and methodology. This in the sense that the researcher actively tries to change imbalances of power through and with her research. As such, subjectivism and values are bound to this research. Yet, this research also aims to be objective by examining different views and by describing all relevant aspects, even if they are negative in relation to the Yasuni-ITT Initiative.

In chapter four it becomes apparent that the international motivations of the Yasuni-ITT Initiative, the different climate change mechanisms, address environmental and climate equity in different manners. Many of those mechanisms however do not address equity aspects comprehensively. Chapter five concludes that the national developments of Ecuador regarding power distribution as well as political, economical, social, and environmental factors have been rather negative. The extraction based economy model of Ecuador has had profound impacts on different factors of the country. Therefore, the country would like to transform its extraction based economy model into a sustainable development one, but it does not have the resources to do so.

Finally, it becomes apparent that the Yasuni-ITT Initiative aims at comprehensively tackle different problems such as biodiversity loss, climate change, poverty and inequity. However, the participation of certain stakeholders (mainly indigenous peoples) is lacking which has a profound negative effect on the participatory process of the initiative, and therefore partly a negative effect on the equity notion. This may also be problematic on the long run as indigenous peoples feel left out and the relationship between certain indigenous peoples and the government is already unstable. Yet, the Yasuni-ITT Initiative may address many aspects of environmental and climate equity through the implementation of different projects better than other climate change mechanisms. The value of the initiative may be much higher than other climate change mechanisms because through it, Ecuador‟s international position and power may even increase.

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List of Abbreviations and Acronyms

CDM:	Clean Development Mechanism
CO_2:	Carbon Dioxide
EUA:	European Emission Allowances
GDP:	Gross Domestic Product
GDI:	Gross Domestic Income
GHGs:	Greenhouse Gases (as CO_2, methane and others).
IPCC:	Intergovernmental Panel for Climate Change
ITT:	Ishpingo-Tambococha-Tiputini (three petroleum blocks in Yasuni, Ecuador).
LULU:	Locally Unwanted Land Use
M.T.:	Metric Tonnes.
NIABY:	Not In Anyone‟s Backyard
NIMBY:	Not In My Back Yard
NOPE:	Not On Planet Earth
TNCs:	Transnational Corporations
PIMBY:	Please In My Back Yard
REDD:	Reduction of Emissions of Deforestation and Degradation
UN:	United Nations
UNEP:	United Nations Environmental Programme
UNDP:	United Nations Development Programme
UNFCCC:	United Nations Framework Convention on Climate Change

1 Introduction; subject and design of the study

1.1 Introduction

Copenhagen, December 2009: world leaders came together to decide upon a new climate change protocol since the Kyoto Protocol, the only international agreement on combating climate change, is due to expire in 2012. Different scientific institutions, such as the Intergovernmental Panel for Climate Change (IPCC), suggest that the stabilisation of the climate system should be around 1.5°C temperature increase. To remain around this 1.5°C, bold decisions must be made. World leaders acknowledge that the world is facing serious problems related to climate change. Yet, they did not manage to come to a new legally binding protocol. Developing countries are getting impatient and angry as they will have to face the most the negative effects of climate change such as drought, floods and fresh water shortages, even if the stabilization of the climate is around 1.5°C.

The Kyoto Protocol has been criticized with regards to „injustice" aspects. This, since developed countries who rectified the protocol did not meet their greenhouse gas (GHG) emission targets till so far, not even with the „off-set" investments in developing countries they can undertake through the Clean Development Mechanism (CDM). Moreover, the GHG emissions are still rising over three percent per year. The CDM aims at investing in sustainable development projects in developing countries through finances of developed countries who in turn, earn credits which they can use to off-set their GHG emission targets. However, the CDM has been criticized heavily with regards to environmental integrity, sustainable development, technology transfer and justice issues.

Currently, deforestation and degradation issues are not included in the Kyoto Protocol. The scientific evidence, however, of the negative effects of forest loss on the climate system is growing. Forests, particularly tropical forests, function as carbon sinks and therefore CO_2 is released into the atmosphere when they are cleared. The rate of deforestation and degradation is however growing rapidly in developing countries. In response, different countries have proposed that a new GHG abatement mechanism for developing countries should be included in the post-Kyoto Protocol: Reductions of Emissions of Deforestation and Degradation (REDD). REDD aims at combating forest loss in developing countries through funds from developed countries. Although the mechanism has not been implemented yet, critiques upon REDD already emerged, dealing with the lack of concern given to indigenous people living in forest areas. Some other countries have proposed other mechanisms to combat or adapt to climate change, including developing countries such as Ecuador (IPCC, 2007; Martinez-Alier and Temper, 2006; Parket et al., 2009; Stern, 2007).

Ecuador, a less developed country in South America, is motivated to combat climate change as it is compelled to deal with the increasing temperature effects on the melting glaciers of the Andes, fresh water shortages, drought and sea level rise. The country, however, remains dependent of petroleum exports, which have not led to economic growth and diversification, did not reduce poverty and inequality, but had strong environmental impacts. As large petroleum reserves were confirmed in the Yasuni National Park of Ecuador, one of the most biodiverse hotspots in the Amazonian region and the world, the country has proposed to indefinitely keep almost a billion barrels of petroleum underground, if the international community contributes with at least half of the opportunity cost of exploiting the petroleum. An internationally administrated fund with UN participation will be created and invested exclusively in conservation, renewable energy and social development. The proposal has already received significant support from international institutions, European governments, NGOs and personalities worldwide. Given the limits of petroleum reserves, the Yasuni-ITT initiative opens alternatives towards sustainable development in the country, allowing a transition towards a post-petroleum society, and promoting ways towards human development within the limits of biodiversity conservation. This proposal, which can be replicated by other developing countries with fossil fuel reserves in biodiverse areas, may open new alternatives for post-Kyoto negotiations with binding commitments for several developing countries, and simultaneously addresses global warming, biodiversity loss, deforestation, inequity and poverty. In addition, Ecuador is the first country aiming at leaving petroleum underground and hence, it aims at *not* emitting GHGs at all (Larrea et al., 2009; Larrea and Warnars, 2009).

The critiques upon climate change mechanisms such as CDM and REDD, as well as historical developments and contexts of the country itself may be perceived as motivations of this ambitious

Yasuni-ITT Initiative. The Yasuni-ITT Initiative may well be a solution to tackle climate change in an environmentally just way, with certain groups no longer being disproportionately affected by global problems and left outside international negotiations. Will these groups have a voice to be heard within international negotiations through this initiative?

1.2 Objectives

In general, this research aims at yielding descriptive as well as explanatory knowledge with regards to environmental and climate justice. The study examines whether the Yasuni-ITT Initiative of Ecuador can be used as a promising pilot project to address environmental and climate justice. Furthermore, existing and proposed climate change mechanism (e.g. CDM, REDD and others) and their critiques are regarded as international motivations for the creation of the Yasuni-ITT Initiative. The critiques upon the different climate mechanisms are related to general aspects, as well as environmental and climate justice issues. The history of Ecuador is perceived as a national motivation for the initiative and is explored shortly by describing and explaining the interests and power relations, in historical, current and future contexts of international social, political, environmental and economic factors. Developments in the Yasuni park are regarded as local motivations of the initiative.

Within the climate change regime and the climate justice debate, countries, scientists, NGOs and others, position themselves differently. In order to execute a valid and accurate research, this study investigates different positions of stakeholders upon the Yasuni-ITT Initiative. In addition, the amount of participation during the creation of the initiative is examined. This study examines whether the Yasuni-ITT Initiative addresses accurately environmental and climate justice as well as related power imbalances. The effectiveness and success of the Yasuni-ITT Initiative depends different factors such as: the strength of the proposal itself; the experts supporting it; the critiques and functioning of current and proposed climate mechanisms; and the scientific and societal legitimacy legitimacy.

The study aims at analysing and assessing whether the Yasuni-ITT Initiative can be considered as an alternative pilot project to address not only environmental and climate justice, but also existing power imbalances. Current and proposed climate change mechanisms such as the CDM and REDD, as well as the history of Ecuador are being examined as motivations of the initiative. These motivations and the Yasuni-ITT Initiative are carefully examined in relation to environmental and climate justice as well as power imbalances.

1.3 Research questions

The general research objective can be put into three main questions:

1. *To what extent, and based on which motivations, does the Yasuni-ITT Initiative not only address environmental and climate justice, but also power imbalances?*

2. *Can the Yasuni-ITT Initiative be perceived as an alternative pilot project which addresses environmental and climate justice, as well as power imbalances?*

These main questions lead to the following sub-questions:

- What are the different existing climate change mechanisms and the critiques upon them from an environmental and climate justice perspective?
- Which existing climate change mechanisms, along with the critiques upon them, can be seen as motivations for the Yasuni-ITT Initiative?
- What historical developments in Ecuador could have influenced the creation of the Yasuni-ITT Initiative?
- To what extent does the Yasuni-ITT Initiative address environmental and climate justice as well as power imbalances?

1.4 Scientific relevance

This study analyses and applies a combination of theories. It aims to give solutions to theoretical and practical problems. To comprehend the complexity of the political and social structure of the Yasuni-ITT Initiative, this research integrates a broad perspective that aims to contribute to the scientific body of knowledge.

In order to examine climate mechanisms in relation to environmental justice, climate justice and power imbalances, different theories are used. This research examines environmental justice, climate change justice and political theories which address power imbalances in a comprehensive manner and in relation to existing and proposed climate mechanisms, particularly in relation to the Yasuni-ITT Initiative. As justice theories deal with international power relations, the disadvantaged powerless (generally impoverished people who live in marginalized areas), and the empowerment of the powerless, it is important to examine power relations with a combination of factors of society, economy, politics and environment, related to historical events. Therefore, this research starts from the philosophical perspective of critical theory, which examines power relations between groups and aims at examining different factors in a historical and comprehensive perspective. Moreover, it will be apparent after chapter two, that critical theory and equity theories are bound to each other since they both consider power relations, ethics, values, subjectivity and the oppression of the less-advantaged. Drawing on critical theory therefore results into an extra analytical value for this research.
Critical theorists (and constructivists) seek to be recognised in the scientific community. However, critical theory is more often accepted within qualitative research and guidelines than within other research. Additionally, the theory is still not completely accepted and widely used, in contrast to other philosophical perspectives for conducting research such as positivism and post-positivism. As such, it may be perceived as a contribution to the scientific community that this research applies and integrates critical theory with environmental and climate equity theories through qualitative, practical research utilizing the case of the Yasuni-ITT Initiative (Crotty, 1998, Guba and Lincoln, 1994).

Effects of climate change, environmental problems, social and economic benefits are often unequal, which makes it significant to examine the theory of environmental and climate justice in relation to this research. Furthermore, the personal interest in justice theories is an important reason for using this theory. Environmental justice concentrates mostly on the social justice aspects of Davy (1997) and Rawls (1999). These individuals state that often the poor have to deal with environmental burdens. Other scientists have been examining environmental and climate equity in different manners. The different theories, including critical theory, are used to develop evaluation criteria which are used to evaluate the different climate change mechanisms on environmental and climate equity (Martinez-Alier, 2002; Martinez-Alier and Muradian, 2001).

Finally, political and social scientists are searching for explanations and recommendations which deal with power relations between different levels and groups. Currently, more research concentrates on international relations, particularly between Northern and Southern countries. The notion of environmental and climate justice is spreading around the scientific community and society as a serious and difficult issue. This research, examines a possible solution to address environmental and climate equity, based on the theories described above. As such, this research may be significant for the existing scientific body of knowledge of environmental and climate justice, as well as critical theory (Davy, 1997; Jamieson, 2001; Low and Gleeson, 1998).

1.5 Societal relevance

Climate change is currently one of the biggest issues debated within international negotiations. Climate change, other environmental problems and natural resource extraction have different impacts on different levels which tend to be distributed unequally, and as such, tend to affect the poor the most, as they are the least powerful group and as they generally lack the adaptation potential. In addition, these environmental issues not only affect nature and certain groups of society, but also cultures, health, politics and economies. As such, climate mechanisms are evaluated and criticized more often in a comprehensive manner and aim at reorganizing certain aspects within global and national societies. As seen above, this research examines the functioning and critique on climate mechanisms as well as the history of Ecuador as a background and context to the development of the

Yasuni-ITT Initiative. These examinations may be useful to improve climate mechanisms. In addition, they may function as additional arguments in favour of the Yasuni-ITT Initiative. Thus, this thesis might be interesting for the international community and for those interested in environmental and climate justice (Martinez-Alier and Temper, 2008; Oilwatch, a&b 2007).

1.6 Contents

The second chapter outlines critical theory as well as environmental and climate equity. First, it discusses critical theory, followed by Davy‟s (1997), arguments for justice, and Rawls‟ (1999) social justice theory, with its procedural and distributive justice notions. The theories of Davy and Rawls correlate with the arguments of the environmental justice movement, which is described subsequently. National and international politics regarding the process of allocating environmental damages in marginalized areas (peripheralization) are explored in section 2.5. Thereafter, I argue why henceforth the term *environmental equity* rather than *environmental justice* is used. In the same section, the term *climate equity* is outlined with its principles and approaches. The chapter concludes with a series of evaluation criteria to evaluate the climate mechanisms and the Yasuni-ITT Initiative.

The third chapter explores the methods and methodology used in conducting this research, based on the criteria described in the previous chapter. The research‟s character, methods and framework are described in subsequent sections, and issues of validity, reliability as well as other aspects of the research process are discussed.

The fourth chapter presents the current climate regime and its mechanisms are presented. The Kyoto protocol and with it, the CDM, REDD and other actual or proposed climate justice mechanisms (including proposals from Bolivia, Saudi Arabia and Indonesia) are described, analysed and evaluated in relation to the evaluation criteria.

The fifth chapter depicts the history of Ecuador and the position of the country in the world. It describes the history of the country in relation to political, social, economic and environmental factors.

The sixth chapter explores the context and aspects of the Yasuni-ITT Initiative. First, the Yasuni Park, its values and threats are described as being local motivations of the initiative. Second, the Yasuni-ITT Initiative, its history, its envisaged functioning and benefits are explained. In addition, the chapter explores the stakeholders, their views, and their amount of participation with regard to the initiative. The next section examines the environmental and climate equity aspects of the Yasuni-ITT Initiative. The chapter concludes on a section that answers the main research questions on whether the Yasuni-ITT Initiative can be considered as an alternative pilot project which addresses not only environmental and climate equity, but also power imbalances.

Finally, a short epilogue follows, which reflects on the research and critically outlines how this research was conducted, with pros and contras.

2 Theoretical Framework

2.1 Introduction

This chapter explores not only different theories and views of critical theory, environmental justice and equity, but also peripheralization, environmental racism and climate equity. The first section describes the seven basic assumptions of critical theory, the philosophical background of this study. Since critical theory can be perceived as closely related to ethics and justice theories, the third section explores two relevant theories of these aspects: those formulated by Davy and Rawls.

The term *environmental justice* has not only different interpretations and connotations, but also different movements, which are all described in sections 3 and 4. The sixth section depicts on the broader scale of environmental injustice practices: the international one. Furthermore, the sixth section explains the theory of peripheralization: the allocation of environmental damages (bads) in certain areas in which poor, marginalized, powerless groups reside. Due to the different interpretations and connotations of environmental justice, section 2.7 explains the supposedly less normative and ambiguous term *environmental equity*. Environmental equity is related to climate change and has even gained its own status as *climate equity*. The latter, with its approaches and principles, is described in section eight.

The final section describes a framework for analyses which is used to evaluate the different climate change mechanisms and the Yasuni-ITT Initiative in relation to environmental and climate equity. Since these criteria influence the research questions, the main- and sub-questions given are rephrased.

2.2 Critical Theory

Critical theory has its origin in Marxism, whose followers believe that humans are searching for their identity through work and labour. However, they believe that humans are alienated from their work and each other, and thus society is not functioning correctly. Marxists believe that this alienation is due to capitalism with which the bourgeoisie (the owners and merchant class) rule over the proletariat (the oppressed): those who do not own the means of production and whose value is solely labour in exchange for wages. Eventually, according to Marxists, proletariats are all humans, including the bourgeoisie. To get their identity back, the proletariats need to start protesting and revolt against the capitalist system in order to enhance justice and equality in society. Since humans do not have real affinity anymore with which they make and create (mainly within developed countries), this notion cannot be applied fully onto current societies. Nowadays, humans gain their identity also through sport, leisure, friendship and more: through multiple identities, but on which unintentionally similar mechanisms apply. Furthermore, neo-Marxists doubt whether justice in society is possible when human history has always contained injustice and inequality (Crotty, 1998; Singer, 2000).

Critical theory has been interpreted by different scientists. Here, I restrict to seven basic epistemological assumptions, based on Kincheloe and McLaren (Crotty, 1998).

The first basic assumption is that in critical theory *´all thought is fundamentally mediated by power relations that are social in nature and historically constituted´* (Crotty, 1998, p. 157). In other words, critical theory is based on the premise of historical realism, in which reality is assumed to be apprehendable. Nevertheless, reality is not only shaped by social, political, cultural, economic, ethnic, environmental, and gender factors, but also reformed into a series of structures that may be considered, incongruously, as „real" (i.e. „natural" and „final"). In addition, for practical reasons the structures of society *are* „real", in the sense of being a virtual or historical reality.

The second assumption extends the previous assumption to include the notion that *facts can never be isolated from the domain of values or removed from ideological inscription.* Values are conceived as ineluctable in shaping inquiry outcomes. Even so, excluding values would not be approved since when doing so it *„would be inimical to the interests of the powerless and of ‚at-risk" subjects, whose original (emic) constructions deserve equal consideration with those of other, more powerful subjects and of the inquirer (ethic)"* (Guba and Lincoln, 1994, p. 114).

The third assumption is that *the relationship between not only concept and object, but also signifier and signified, is never stable and is often influenced by social relations of capitalist production and consumption.* A signifier is a form or symbol and signified refers to an idea that we have with the signifier.

The fourth assumption states that *language is essential to the construction of subjectivity* (subjectivity in terms of conscious and unconscious awareness). In contrast to some other theoretical perspectives, as positivism, critical theory does not take objectivism as a central epistemological starting point, which is assumed to be value free and where an object is an object, regardless of the awareness of existence or connotation associated to it. On the contrary, critical theory takes subjectivism as a starting point where significance of objects is imposed by the subject and the object makes no contribution to the generation of meaning. Additionally, with subjectivism, it is assumed that humans construct meaning out of something and they import the connotation from somewhere else, such as their cultural background.

The fifth assumption describes that *certain groups within any society are advantaged over others and this leads to an oppression that is most forceful when more advantaged accept their social status as natural, necessary or inevitable.* Oppression by the more advantaged can be revealed in different ways, and concern for only one form of coercion at the expense of others can be counterproductive due to the connections between them.

The last assumption is that mainstream research practices are generally implicated, although often unintentionally, in the *reproduction and transformation of social, political, cultural, economic, ethnic, and gender oppressions* (Crotty, 1998; Guba and Lincoln, 1994).

In response to these assumptions, critical theorists are interested in a comprehensive view of social change and history with cultural, political, economic, and other factors, as it occurs in relation to social struggle of societies. Critical theorists assume that the outcome of their research may serve as a first step toward addressing and confronting injustices in society. Therefore, the critical theory approach has a definite normative dimension, in which the researcher aims for a transformative and changed outcome (action based research) instead of only being interested in „knowledge for knowledge"s sake", which is common for other theoretical perspectives. Critical theorists believe that to offer an explanation of how power relations function, a comprehensive view is needed and therefore their analysis draws upon studies from other paradigms, such as *environmental justice* (Clark, May 11, 2009; Crotty, 1998).

2.3 Ethics and Justice

This section outlines some theories of justice and ethics. First, there is an outline about different arguments for justice, based on Davy (1997), encompassing elite, utilitarian, and social justice. In addition, the theory of Rawls (1999), who deepened the theory on social justice and tried to use the theory for the design of policies and politics, is described.

2.3.1 Davy: three arguments for justice

Elite justice

Elite or libertarian justice is based on the idea that the minimal state favours the „strong", predominantly the powerful and rich of society, because this justice notion restricts governmental intervention on behalf of the less fortunate. Although Davy does not extend the term „strong" to a broad scale, it is possible to extend the term to refer to groups, authorities, institutions, regions and/or countries. In the current global environment, one can state that the U.S.A, Europe, Japan, and other developed countries are the „strong" countries.

With elite justice, those who contribute most to society (the strong) benefit the most from having liberty. The achievements of these „strong" individuals, who successfully used and took advantage of the market, are „just" within elite justice. Elite justice, however, is not necessarily blind to the fact that individualism can harm others and that the energy from individuals can be used unfairly. Liberals do not have confidence in a strong government, but put their faith into individuals who are supposed to know best for them and for society. However, the government still has a purpose in the sense that

when the „strong" are prevailing, they need the government to protect the „strong" (and their properties) from the „poor". In the end, though, liberals do believe that the benefits from the „strong" will filter down to the less fortunate (Davy, 257 – 261).

Utilitarian justice

Utilitarian justice is associated with utilitarian theories which favour the „most"; generally the middle class. However, the word „most" can also refer to the „poor" of society, due to the large amount of impoverished people in many nations. Additionally, the gap between the rich and the poor is widening.

Utilitarian justice restrains the excessive use of power and other advantages of the „strong". Utilitarian justice can be associated with moderating liberalism in the sense that the state regulates the market. In western countries social security plays an important role in this. However, there still exists a tension between individual and the public interests (common goods) within societies and since the public interest changes over time, it is defined in different ways by different governments. To protect the public interests, together with the justice of the „most", freedom to pursue individual interests is restricted by social contracts of the government, which refers to *contractarian justice*. Some scientists state that contractarian justice is related to utility and the public interest is achieved when the happiness of (and benefits for) the community is bigger than other's unfortunates. Hence*, „The concept of utilitarian justice concedes the sacrifice of the welfare of individuals or a group for the common good"* (Davy, p. 263).

Social justice

Social justice is related to the oppression of the „poor". The „poor" are generally the lower class: slaves, peasants, uneducated, coloured, women, homosexuals, minorities, vulnerable, physically or mentally weak, those with low or no income (less than $2 a day), those with no special talents, or those in another way worse off than the „most" or the „strong". The „poor" can also refer to developing countries and Least Developed Countries (LDCs). Some developing and middle income countries, such as China, India, Brazil and Ecuador, can also represent the „most" since they belong to the middle income and/or the biggest group of countries.

Social justice is in sharp contrast to elite justice since the latter states that the protection of individual interests or properties is only beneficial for the „strong", which, in the view of social justice, increases the gap and unfairness between the „strong" and the „poor". Social justice argues that liberty and property achieve strong individual wealth, but at the same time ensure injustice and poverty. To combat these injustice issues, with social justice, one has to define the „oppressor". Different movements are related to social justice since they fight against ideas and practices which exploit the „poor", such as the civil rights movement, the feminist movement, and the environmental justice movement. Marxists also refer to social justice by stating that capital is a social power which is for all members of society, including the poor. However, according to Davy (1998, p. 264), social justice proponents are less confident about how to design socially just societies and institutions. The theory of market justice states that the market is supposed to enhance justice through competition and distribution; with social justice, the guilty need to be charged and held responsible for the damages and risks they create in poor areas (Davy, 1998; UN, 2009).

The three arguments for justice have different implications on the choice of policy and strategy. In reverse, behind every policy and strategy lies a different justice intumescence.

One of the problems with Davy's theory is that the different arguments for justice are related to national scales, and not international ones. The international scale is imperative for this thesis and therefore in the above, I related the arguments to countries. Furthermore, the three different justice mechanisms are only applied upon economic systems in the sense that justice and different groups of society are related to monetary terms and the market. Davy does not accurately examine other mechanisms such as social ones, which is problematic for the application of his theory upon this research. In addition, Davy´s theory does not consider different kinds of justice, although he mentions in his article other scientists who did consider this. Davy mentions that social justice theorists are often very persuasive, but they are less convincing as to how institutions should be designed in a social, just society. As such, different aspects need to be examined before operationalizing international

environmental justice for this research. In terms of different kinds of justice and a solution on how to design institutions to enhance justice, Rawls‟ *A Theory of Justice*, mainly related to social justice, can be useful as Davy mentions as well.

2.3.2 Rawls‟ theory of justice

„*Justice is the first virtue of social institutions"* (Rawls, 1999, p. 3) is one of the first sentences of *A Theory of Justice.* Rawls states that social institutions refer to the practices and rules that structure relationships and interaction among agents and actors. The moral assessment of practices between actors and rules is the domain of social justice. Social justice is enhanced when „*The welfare state favors "the poor" because it directly addresses the needs of the least advantaged"* (Davy, 1998, p. 257). Rawls endorses „justice as fairness‟ by using „liberty‟, „utility‟ and „equality‟ to create a model that promotes the interests of the poor. Rawls‟ theory can mainly be applied on libertarian societies and it relates to the social justice argument of Davy (1998).

A Rawlsian-just society needs to minimize pain (mostly of the poor), instead of promoting happiness among certain groups (utilitarian justice) or allowing the strong to develop and triumph (elite justice). A social order can be accepted as just if it is the outcome of a fair agreement that takes equal account of the interests of all citizens. Governmental interventions need to start from the bottom of society with a range of interventions working its way up in society towards more equality and improving the conditions of the poor. In order to do so, Rawls distinguished two types of justice: *procedural and distributive*. Procedural justice refers to the process of allocating fairness, which includes processes, policies, regulations and other political instruments. In addition, Rawls distinguished three ideas of procedural justice: perfect procedural justice, imperfect procedural justice and pure procedural justice. The first examines the independent criteria for what constitutes a fair or just outcome of the procedure, and a procedure that guarantees that the fair outcomes will be achieved. The second idea relates to the first aspect of the first idea, but then no method can guarantee that the fair outcome will be achieved. The third idea describes circumstances with no criteria for what constitutes a fair or just outcome other than the procedure itself. Distributive justice relates to the outcome of the procedural aspects of justice or fairness from a policy perspective (Anand, 2004; Davy, 1998; Rawls, 1999; Visser, 2009).

Rawls considers the *„veil of ignorance"* for determining just and equal outcomes. The veil of ignorance refers to the ideal, hypothetical situation that representatives of citizens choose their principles and make their decisions of justice in a *veil of ignorance:* if representatives do not know which social class he or she will be born into, it is likely that this results in a more even distribution of power. This can be applied across generations. In the „veil of ignorance‟ everyone would have the same political, economic and social benefits, including the least well-off .

The representatives of citizens would need to choose two principles to achieve justice as fairness, shown in Box 1. If a society meets these principles, one cannot promote justice by violating them. The first principle, concerning distributive justice, can be referred to as the *equality principle*. The second principle, with two priority rules, can be referred to as the *difference principle*. Although, the principles widen the Rawlsian theory of justice, they also complicate it to apply in practice. However, Rawls described six aspects which restrict justice as fairness, taking mainly the assumptions of procedural and distributive justice into account (Davy, 1998; Hamilton, 1997; Low, 1997; Rawls, 1999; Visser, 2009).

Box 2.1: Principles and priority rules of Justice of John Rawls

„First Principle
Each person is to have an equal right to the most extensive total system of equal basic liberties compatible with a similar system of liberty for all.

Second Principle
Social and economic inequalities are to be arranged so that they are both:
(a) to the greatest benefit of the least advantaged, consistent with the just savings principle, and
(b) attached to offices and positions open to all under conditions of fair equality of opportunity,

First Priority Rule (The Priority of Liberty)
The principles of justice are to be ranked in lexical order and therefore liberty can be restricted only for the sake of liberty. There are two cases:
(a) a less extensive liberty must strengthen the total system of liberty shared by all;
(b) a less than equal liberty must be acceptable to those with the lesser liberty.

Second Priority Rule (The Priority of Justice over Efficiency and Welfare)
The second principle of justice is lexically prior to the principle of efficiency and to that of maximizing the sum of advantages; and fair opportunity is prior to the difference principle. There are two cases:
(a) an inequality of opportunity must enhance the opportunities of those with the lesser opportunity;
(b) an excessive rate of saving must on balance mitigate the burden of those bearing this hardship".

Sources: Rawls, 1999.

2.4 The environmental justice movement

This section describes the environmental justice movement in the USA, the principles of the movement, and its role on an international scale.

2.4.1 The EJ movement in the USA

The environmental justice (EJ) movement in the USA is based on the social justice (SJ) and civil rights (CR) movements of the 1960s, as well as the theory of Rawls. The EJ movement was not identified by scientists until the 1980s and 1990s as the actors in those movements not often used an environmental idiom, but a social justice idiom, implying that EJ belongs more to environmental sociology and the study of race relations than to environmental sciences. „Environment" can be considered as a social construct, in which there is a material dimension to the construction of the environment that refers to the real, material, physical production, such as the general surroundings of people, nature and animals with noise, air, parks, natural resources, water, and fire. However, environment can also be seen in relation to anthropogenic transformation of the environment, since humanity has an impact on our environment (and nature), as in the case of global warming. There are many definitions of justice, especially of environmental justice. Some state that the latter is about the unequal distribution of environmental problems in disadvantage for certain social, economic or political communities. With these aspects on the background, the EJ movement started in the USA (Kruize, 2007; Martinez-Alier, 2002).

The EJ movement started officially in 1982 with a massive non-violent protest in Warren County, North Carolina, USA, since Governor Hump had decided to locate a dumpsite for PCB residues in the county. The county had 16000 inhabitants in the 1980s of whom 60 per cent were African-American (most under the poverty line in the USA). During the six week protest, 500 people were arrested, some of whom had collaborated with Martin Luther King. Despite the protest, the dumpsite was constructed,

though the new EJ movement was born. The principles of EJ (see 2.4.2 and box 2) were proclaimed, and the EJ movement became well known through The First National People of Color Environmental Leadership Summit in Washington, DC, USA in October 1991.

The SJ and CR movements, the foundations of the EJ movement, started with the black movement which was against racial disparities and racism. The question arose why black people were totally absent from the environmental organizations. Later, the SJ and CR movements noticed that not only the poor and/or black and minorities were suffering from SJ issues, but also from EJ issues. The people of colour had enough of the „white" or upper-class environmentalism since they were trying to save the rainforest, insisting on urban issues, and ignoring the fact that many rainforests are civilized jungles by native groups. Some environmental groups. such as Greenpeace, were responding to EJ issues and decided to include EJ principles in their policies and conceptions since it related to their philosophies (Martinez – Alier, 2002, p. 169 – 170

Redefinition and environmental racism

According to Bullard (Schweizer, 1999), the EJ movement is a redefinition of what environmentalism is all about since it is concerned with everything in life: where we work, live and play, thus, the natural and the physical world. This implies that humans cannot separate the physical environment from the cultural environment. The EJ movement in the USA tries to address the inequities of society that result from human development. Moreover, EJ tries to abolish environmental damages. In contrast to traditional environmental movements, the EJ movement tries to address power imbalances and lack of political enfranchisement. In addition, the movement aims at redirecting resources to create a healthy, liveable, equal, and sustainable society. In other words, the EJ movement is an organized social movement against local instances of *environmental racism* (ER): the disproportionate allocation of environmental bads (as toxic and hazardous wastes) that differentially affects or disadvantages individuals, groups or communities, such as Latino-, Native- or African-Americans, on the basis of race or colour, whether the differential effect is intended or unintended. Furthermore, Bullard states that race is still a potent factor for predicting where environmental bads and Locally-Unwanted-Land-Uses (LULUs) end up (Schweizer, 1999). ER and the EJ movement state that race and class are considered, on purpose or not, in decision making by people in power and the power arrangements are often unequal in or between different societies. ER has not a universal language or discourse and it is therefore usually not part of the discourses of protests against the disproportionate allocation of pollution, privatization or nationalisation of environmental resources. Furthermore, ER is hard to prove, due to different opinions about the causes and effects of LULUs and ER.

The EJ movement states that power rests in all people and therefore, a collective society should be most powerful. In the end, EJ would be the fair treatment and significant involvement of all people, regardless of race, colour, origin, or income with respect to development, implementation, and enforcement of environmental regulations and policies. The EJ movement in the USA is mostly organized on the grassroots level, with no directors or boards, with a bottom up approach in which everyone is equal and can participate. The EJ movement is an all-inclusive movement due to acknowledgement of the existing relations between the physical and social/cultural world, which makes EJ a moral and ethical concept, based on values and ideology (Low, 1999; Schweizer, 1999; US-EPA, 2009).

The principles

There are 17 basic principles of EJ, formed by delegates of the First National People of Colour Environmental Leadership Summit, which are later adjusted and used by the EJ movement (see Box 2). Within this research, extra attention is given to principles 1, 3, 5, 7, 10, 11, 14 and 17, as they consider „all species" justice, intergenerational justice, human and indigenous peoples" rights, as well as international corporations.

2.4.2 The international EJ movement

As an organized movement, the EJ movement has been almost restricted to the USA and has not much extended to Europe, perhaps because the gap between rich and poor is bigger in the USA than in Europe. Though, popular names such as „environmentalism of livelihood ecology" and „environmentalism of the poor", are concepts given to movements in the South that address environmental impacts which threaten poor indigenous peoples. In developing countries, the main socio-environmental question in the 1980s was whether an indigenous, independent environmental movement for the poor was in existence, a question which was first addressed in India and South-East Asia, and later in Latin America. In South Africa, a country struggling with racial issues for many decades, the struggle shifted to EJ conflicts from environmental problems related to social aspects. Environmentalism of the poor points out that indigenous and peasant groups have often coevolved sustainably with nature and have ensured the conservation and biodiversity of their environment (Martinez-Alier, 2002).

In the South, environmental movements often use arguments related to human rights and have alliances with aid and development organizations such as Amnesty International. However, in the South, „*[…] environmentalists are often attacked by business and government (and the remains of the old left) as being motivated by foreigners wishing to stop economic development"* (Martinez-Alier, 2002). Since this process is stronger in the South than in the North, it brings environmentalists in the South closer together than in the North; although, direct lobbying against the state and companies in the South is often restricted not only due to geographical and social distance, but also due to the lack of resources. Therefore, environmental struggles in the South are, more often than in the North, accompanied with demonstrations against the state and companies. Furthermore, in these regions, environmental conflicts are not reported and are thereby „invisible". As such, the civil society of the South often feels abandoned by the lack of support from the government. NGOs play an important role in supporting and empowering civil society in the South, by translating local discourses into environmental, human, and territorial rights discourses that connect national and international organizations and networks. The latter implies that the EJ movement uses different framing and coalitions at different scales and in relation to different stakeholders (Anand, 2004; EJN, 2009; Low and Gleeson, 1998; Schweizer, 1999).

Box 2.2: Principles of environmental justice

1. EJ asserts the sacredness of the Earth, ecological unity and the interdependence of *all species*, and the right to be free from ecological destruction.
2. EJ asks for a public policy which is based upon mutual respect and justice for all people. This policy must be free from any form of discrimination or bias.
3. EJ permits the right to ethical, in balance, and responsible use of land and renewable resources within the interest of sustainable living for *all species*.
4. EJ demands universal protection from nuclear testing, extraction, production and disposal of toxic or hazardous waste and poison. This also includes nuclear testing that threatens the right to clean air, land, water and food.
5. EJ fights for the right of self determination of all people in terms of politics, economy, culture and environment.
6. EJ insists upon the termination of production of all toxins, hazardous waste, and radioactive materials. Furthermore, producers (past and current) of such need to be held responsible for those who need detoxification and the suppression at the point of production of such risks.
7. EJ demands that all humans have the right to participate equally in decision making, which includes planning, assessment, implementation, enforcement and evaluation of policies.
8. EJ aims at that all employers (including at home workers) have the right to a safe and healthy work environment. This is accompanied with the demand of that employers must not be forced to choose between an unsafe environment and unemployment.
9. EJ tries to protect the rights of victims of EJ by insisting on a full compensation and reparations for risks and damages and the access to good health care.
10. The EJ movement considers acts of environmental injustice by governments a violation of international law, the Universal Declaration of Human Rights (UDHR) and the United Nations Convention on Genocide (UNCG).
11. The EJ movement states that EJ must recognize special legal and natural relationship of Native People, originally pointed to those living in the USA, through treaties, agreements, compacts and covenants affirming sovereignty and self – determination.
12. EJ demands for urban and rural ecological policies which aim at clean up and rebuild cities and rural areas in balance with nature. This includes respecting cultural integrity and heritage and fair access to resources for all people.
13. EJ demands a strict enforcement of principles of informed consent and it demands for a termination of testing of experimental reproductive and medical procedures and vaccinations on people of colour.
14. EJ is against destructive operations of multi – national corporations.
15. EJ is in opposition of military occupation, repression and exploitation of land, people, culture and other species on earth.
16. EJ asks for education of present and future generations which underlines social and environmental issues.
17. EJ entails that humans, and individuals, have make conscious personal and consumer decisions to consume as little of the planet"s resources and to produce as little waste as possible. This principle emphasizes also the need to make conscious decisions about our lifestyles to insure a healthy natural world for present and future generations.

Sources: Delegates to the First National People of Color Environmental Leadership Summit, 1991; EJN, May s27th 2009.

2.5 National and international politics

With environmental justice there are a number of distribution and allocation aspects important to examine. Allocations of negative environmental activities are considered to be unequally distributed and occur at a variety of scales: between communities, cities, regions and countries. Blowers and Leroy (1994) describe that environmentally damaging practices or Locally-Unwanted-Land-Uses (LULUs) such as chemical and hazardous waste, tend to be located in certain areas. This may be due to the process of „peripheralization": LULUs are likely to be located in peripheral and marginal areas with less powerful people, as there are certain push and pull factors related to these land use types. It is assumed that the „poor", deal more with the process of peripheralization than others since others do not want these land use types. Thus, the more powerful areas push LULUs to more peripheral and marginalized areas as the powerful stated „Not-In-My-Backyard" (NIMBY).

On the other hand, there may be certain pull factors of peripheral regions for LULUs. The real peripheral regions, the poor regions of the world, are interesting for foreign investments due to the richness of their natural sources. Some theories state that the capital flow to poor regions is concentrated in small countries with high growth rates, middle-income countries and low-income-fast-growing large countries. However, in practice, the capital flow mainly goes to developed regions. In addition, developed regions in the North are dependent upon imports from developing regions in the South for a growing part of their economic requirements, such as the raw materials petroleum, gas and wood. Conversely, developing countries are generally specialized in export of natural resources. This creates a lock-in situation because the South cannot afford to search for alternative forms of economic growth. Peripheral areas have additional pull factors for LULUs because they are generally not only remote, less powerful and have a culture of acceptance, but also deal with economic marginality, environmental degradation, high unemployment rates, high obligate debts, capital scarcity, low costs of labour and regulations are less strict in the South than in the North. The LULUs from the Northern corporations can remain in the South due to pull factors, next to problems such as poverty. As such, local politicians and managers often support harmful economic activities in an effort to grow jobs and establish a foundation for the local economy. This latter development is generally referred to as Please-In-My-Back-Yard (PIMBY).

To conclude, LULUs are pushed further into the corners of the world, creating impacts which are felt disproportionately by certain social groups, such as indigenous peoples. Big companies of industrialised countries have other interests than indigenous people in nature and environment, since they perceive it as a source for economic growth, not as something which needs to be dealt with in a sustainable manner. As such, different peoples in the world see their basic human rights being compromised as they lose their livelihoods, culture, safety, and sometimes even their lives. In addition, peripheralization also has a considerable impact on ecosystems (Blowers and Leroy, 1994; Low and Gleeson, 1998; Martinez-Alier and Muradian, 2001).

Developing regions especially the poorest, are frequently not able to protest against LULUs because these regions are less powerful and have less capacity than developed regions. Protest against LULUs (only) start when the local community no longer benefits from these economic activities.

Fortunately, there has been a shift in placing hazardous waste through the Basel Convention of 1989. The convention prohibits the export of hazardous waste from developed to developing countries except for recovery of raw materials or recycling. Although this convention closed a part of the international injustice discussion of hazardous waste dumping, peripheralization remains a problem and it might occur that through this treaty, LULUs are relocated to the least developed countries. Therefore, some argue in favour of NIABY (Not-In-Anyone"s-Backyard) or NOPE (Not-On-Planet-Earth) (Low and Gleeson, 1998; Martinez-Alier, 2002; Martinez-Alier and Muradian, 2001).

2.6 Environmental and Climate Equity

This section consists of an explanation of environmental equity, followed by an application and transfer of this concept onto the climate change issue. Climate equity, based on an article of Heyward (2007) is broadly discussed broadly and is based on Heyward (2007).

2.6.1 Environmental equity

Since environmental justice is a normative concept and encompasses different definitions and connotations, many scientists prefer to use the supposedly less normative term of *environmental equity* (EE). Environmental equity can be perceived as an ideal, or set of ideals that form conceptions of what is fair or just. As with EJ, with EE, interests are often taken into account. Interests represent generally what is best for an individual, whereas equity represents the common good of a nation or society. However, competing versions of what is equitable are bound to the interests of its supporters. *„Arguments based on equity are usually interconnected with interest, and moreover are sometimes employed as a more publicly and politically acceptable rationale for essentially self-interested motivations"* (Heyward, 2007, p. 519). According to some, EE does not only refer to the outcome of distribution processes of fairness and power (the spatial distribution of environmental bads and benefits, also referred to as distributive or geographical equity), but also to the response of an official institution (as the government) to the demands of the EJ movement: institutional instruments and services to guarantee EE. In other words, EE also refers to policies and instruments used by certain institutions which try to resolve environmental equity issues. In this sense, one can perceive EE somehow as procedural justice of Rawls since it relates to the instruments governments or other institutions use to respond to injustice practices. Due to the less normative form and better possibility of application, this research uses, henceforth, the term *environmental equity* to strive to exclude definition discussions (EJN, 2009; Heyward, 2007; Kruize, 2007; Rawls, 1999).

2.6.2 Climate Equity

One of the most urgent global environmental problems we are facing today is climate change. Climate change is overwhelmingly the result of cumulative emissions of greenhouse gases (GHGs) from the developed nations. However, the impacts are unevenly felt by societies and communities in developing countries. *Climate equity* (CE) is different from (EE) due to scale and theme since the scale is broadened to a global one and climate is a sub-theme of environment (Anand, 2004; Low and Gleeson, 1998).
In the past few years, with the discussions regarding the Kyoto Protocol and climate change, many scientists examined different ideas about climate change mitigation and adaptation in relation to ethics, responsibility and equity such as Jamieson (2001); Heyward (2007); all the articles of Environmental Politics, volume 17, Issue 4 (2008); Olsen (2007); Low (1999); as well as Paavola and Low (2005). The ideas often coincide; however, they also differ and are ambiguous in operationalization. Although I have examined much literature which depicts on climate equity and ethics, in this section I restrict to the definitions of Heyward (2007). She described shortly and clearly what the different views and definitions are and thereby she more or less summarises related literature.

There are many different ways to address the causes and effects of climate change. Basic principles on which to create a solution for climate change can reasonably be perceived as equitable from one standpoint, while seemingly inequitable from another. If some actions are regarded as inequitable, countries run the risk of failing to act at all upon climate change and climate inequity. *„Thus, careful examination of equity-related arguments in climate change negotiations – with attention to national circumstances of countries that promote them – may be useful in developing practical responses to the problem"* (Heyward, 2007, p. 519).

The main discussion of climate equity related to mitigation is held between developed and developing countries. Developed countries are the major cause of climate change due to their GHGs emissions. Developed countries are often better equipped than developing countries to respond to climate change issues. Conversely, emissions from developing countries have always been lower but are increasing rapidly. Yet, developing countries have more opportunities to make the transition to an

economy which is less GHG-intensive as they do not need to totally transform an energy inefficient society as most developed countries ought to. The problem is however that developing nations often lack sufficient economic resources which influence the possibility of transition and the abilities to fight against the impacts of climate change. Within the United Nations Framework Convention on Climate Change (UNFCCC) the different circumstances of countries are recognized in article 3.1: countries should protect the climate on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Nevertheless, an operationalization of this article has so far been impossible to negotiate.

According to Heyward, climate equity related to mitigation can be based on three basic principles: Equality, Responsibility, and Capacity. Within each of these principles, different approaches can be discerned.

Equality

Equality in the climate change debate relates to the equal rights to the atmosphere and equal efforts by different parties to combat climate change. According to Heyward, equality based climate change negotiations and/or strategies one can distinguish three approaches: egalitarianism, sovereignty and comparability.

Egalitarianism

Egalitarianism is based on the equality of rights to the atmosphere for all humans as global commons. Adherents of this approach assert that all people should have equal shares of GHG emissions with which the earth and species can cope with, according to scientific studies. Thus, emissions should be proportionate to a country‟s population.

Many understand and agree with the notion that no one owns the atmosphere and that its „distribution‟ should be equally shared among humans. The problem with egalitarianism; however, is that it is generally not applied to the sharing of environmental resources. Moreover, application of egalitarianism would distribute costs quite unevenly, as some countries would bear considerable costs, while others would gain significant entitlements. Additionally, the allocations of emissions would be rather complicated, particularly since benefits from emissions are often spread and diffused beyond the source of origin through trade and international change. „*Concerns have also been expressed about the environmental effectiveness of an egalitarian approach, given the large emission increases it would allow developing countries"* (Heyward, 2007, p. 521). Although, some elements of egalitarianism could be used within the climate change regime, applying it as only one approach is unlikely to be politically feasible.

Sovereignty

Sovereignty is based on equality rights for all countries. „[...] *the sovereignty approach takes current emission levels as the status quo, based on the notion of historic entitlements"* (Heyward, p. 521).

Developing countries believe that this approach would institutionalize inequality since they would be restricted in emissions at their current growth rates, whereas developed countries would be able to emit high quantities of GHGs for their economic growth and they are not held responsible for their high emissions in the past. On the other hand, developed countries are generally in favour of the sovereignty approach as it would be based on current emissions, which is strengthened by the notion that before 1990, the world was still unconscious and uninformed about the consequences of GHG emissions on the climate system. This approach might be easier to negotiate than egalitarianism, but it could also lead to highly uneven cost distribution when particular national circumstances might not be adequately taken into account.

Comparability

Comparability is based on the equality of effort of countries in addressing climate change. Developed countries often support the notion for relative comparability of effort to prevent a „free rider" situation in which some countries put in the effort and others enjoy the benefits of those efforts without contributing to the cause of combating climate change. Many developing countries perceive the comparability approach as inequitable, stating that they should not be obligated to put equal effort into solving a problem they had less hand in creating. Another concern with comparability is carbon leakage: the possibility that if only developed countries have emission reduction targets, emissions could be redirected to developing countries, leading to uneven economic impacts, limited environmental effectiveness and no actual global emission reductions. The importance of this approach lies in its relational quality namely, if some parties seem to get a better deal than others, an agreement around climate change mitigation and adaptation might be perceived as unfair, in spite of how it measures equity considerations. Despite the problems, without taking into account this approach to some extent, any solution to climate change and climate inequity might fail (Heyward, p. 522).

Responsibility

The responsibility principle is based on the notion that all countries have, to some extent, a duty to address climate change in accordance with their „Common But Differentiated Responsibilities" (CBDR), as stated by the UNFCCC. There are two approaches with this principle: the polluter pays principle (PPP) and the benefit principle (BP).

Polluter Pays Principle

With the PPP, responsibility for environmental damage should be „paid" primarily by those contributing to the consequences and damages, thus it can be perceived as directly related to the social justice argument of Davy (1998). Furthermore, with PPP, each country's responsibility to climate change should be taken into account in terms of historical, current and, as emission levels per country change, future GHG emissions.

As egalitarianism, this approach is supported by developing countries while mostly developed countries have accepted that differences of responsibility should be considered with climate change mitigation efforts. The problem with this approach is that it is difficult to apply in practice since climate change is a continuous problem and everyone is a polluter, albeit to different degrees. Furthermore, the allocation of responsibilities is accompanied with different practical and ethical questions since the chain of cause and effect with climate change is complex and uncertain. Additionally, the extent of responsibility of the damage to the atmosphere is difficult to quantify. Another difficulty is that emissions and benefits of countries are often shared through trade and related to peripheralization. The question is then whether the importers of the goods should bear the responsibility for the emissions of the exporter and how those responsibilities should be calculated.
Although this approach has its difficulties, PPP remains important to take into consideration within the climate equity debate under the condition that it somehow reflects degrees of responsibilities for the causes of climate change.

Benefit Principle

„The benefit principle suggests that a country's responsibility to address climate change should be linked to the benefits gained" (Heyward, p. 523). With this approach, it would be inequitable when a country acts upon climate change without benefitting from its actions or if a country benefits disproportionately without putting the effort in combating climate change as it should in accordance to other climate equity approaches. If developing countries do not observe direct benefits of their efforts in combating climate change, they are unlikely to act and adopt a proactive approach for developing countries. Although this approach needs to be balanced with other equity considerations, it is important for a workable and equal climate change treaty and it may motivate developing countries to take a proactive approach with climate change mitigation and adaptation.

Capacity

The capacity principle is based on the notion that those with the greatest capacity to address climate change should contribute more than the less capable. This principle is particularly linked to industrialized and richer countries since industrialization and greater wealth is often the cause of GHG emissions. Capacity aspects are not only complex and ambiguous, but are also affected by many factors such as wealth, resource availability, technology, institutions, skills, infrastructure and opportunities. There are four approaches related to this: economic situation and resource availability, basic needs, domestic constraints, and opportunities.

Economic situation and resource availability

This approach states that developed countries should put more effort in combating climate change as they have generally better access to technologies and institutional, financial plus human capacities than developing countries. Economic situation and resource availability can be put in relation to the other approaches within the capacity principle. Although the need to incorporate this notion is widely accepted within climate change regime, it is argued within the UNFCCC that technologies need to be shared with and shifted to developing countries in order to support them to transform to a sustainable society so that globally, GHG emissions decrease. However, it can be argued that developing countries have better access to certain resources since they can transform faster into a sustainable developing country as they are developing their economy and have not yet developed into an energy consuming society.

Basic Needs

Developing countries, particularly least developed countries (LCDs), argue that concerns of poverty eradication and meeting basic needs of their citizens must be given priority over addressing climate change, especially where these aspects may conflict. Starting from basic needs, such as food and shelter, is an approach of the capacity principle since more immediate and overwhelming basic needs problems operate as constraints in developing countries to act upon climate change. However, basic needs can also be used as a separate principle in the sense that the strong and well-endowed should help the weak and less well-endowed to meet their basic needs. The latter has been criticized by many, since it would indicate that with a problem, the strong should support the weak and it therefore suggests to keep power distribution in its current status and situation as power is often related to interests and dependency. Besides, one can argue that a clean environment, a clean atmosphere and a world without man-made climate change and air pollution is also a basic need.
The UNFCCC stated that economic and social development and poverty eradication are the first overriding priorities for developing countries. Moreover, the UNFCCC recognizes that sustainable economic development is essential for adopting strategies which address climate change.

Domestic constraints

National governments often do not consider costly climate change actions as being in the interests of their citizens (their primary responsibility). Competing policies and pressure groups addressing problems such as poverty, health, education, and food can create powerful domestic constraints for combating climate change. Short-term costs of addressing climate change are frequently more apparent in developing countries than potential long-term risks accompanied with not addressing climate change. Benefits of national efforts in relation to climate change are generally difficult to oversee due to diffused global benefits. These arguments are linked with the responsibility approach. The domestic constraints approach can be criticized in the sense that climate change will jeopardize the basic interests and rights of their citizens to protect their environment, the common good, health and survival. In addition, national governments can put pressure groups and competing policies deliberately on the agenda to argue that these domestic constraints withhold them from acting on climate change.

Opportunities

Opportunities to change the economy vary widely between countries as some are already quite energy-efficient, others are heavily dependent on fossil fuels, and again others can more easily and cost-effectively incorporate new and clean technologies. It would be inequitable when a country with little opportunity to GHG reductions is expected to generate the same results as those with more opportunities to make cost-effective reductions. The UNFCCC recognizes that consideration should be given to countries with economies vulnerable to adverse effects of measures on climate change, notably those economies that are highly dependent on income generated from production, processing and export and/or consumption of fossil fuels, and energy-intensive products and/or the use of fossil fuels. Nevertheless, these economies will be high emitters later and if they do not act now, it will be harder to transform their economies later. In addition, it might be unfair to state, as the Kyoto Protocol does, that developed countries with such „vulnerable" economies can emit more than other developed countries, although they might even have more economic opportunities to address climate change. Finally, exports of these fossil fuels and energy-intensive products mainly go to developed countries and the question then arises: „Who should „pay" for these exports, in relation to GHGs? The importers or the exporters?"

2.7 Continuation of research

This chapter has discussed different theories and views on justice, environmental justice, equity and climate equity. But what does this all imply for the research at hand and how can we evaluate mechanisms on the basis of these theories? Since ethics is nearly intrinsic to critical theory and equity, it is important to take into account the ethics of the different theories with this study, and therefore, clear evaluation criteria are hardly possible. Yet, the framework for analysis (evaluation criteria) is presented here, whereby this study can evaluate the Yasuni-ITT Initiative of Ecuador and examine what the inducements are for the development of the initiative. The evaluation criteria are based on the described different theories, albeit, often adjusted due to critiques and applicability problems.

Evaluation criteria

The seven basic epistemological assumptions are the base of the philosophical background of this study and the criteria used for critical theory. As such, these seven assumptions are all taken into account with this research and the research process, which is particularly important for the methodology (see next chapter). Nevertheless, some extra explanation on how to apply them on the research and the research process is needed.

The first assumption of power structures in historical context denotes that the object of research is to be described in relation to (international) historical power relations and events, together with the current international position of the research object (the Yasuni-ITT Initiative). In relation to the first and last assumption, the following series of related factors which are transformed in history are included in the historical and current international power relation analysis: politics, economy, environment and social factors. The second assumption of critical theory, the relation between facts and values, is taken into account as a fundamental aspect of the research and research process. Values are considered as a fundamental aspect in relation to environmental and climate equity, since the theories are based on values. However, in relation to environmental equity and peripheralization, aspects such as LULUs and NIMBYs are factual since one can calculate and validate them. The third and fourth assumptions are taken into account with this research as follows: the unstable relationship between concept and object is often mediated by social relations of society and subjectivity is bound to the language of certain stakeholders. The fifth assumption, that certain groups of society are advantaged over others, is important to use as a criterion for this research due to the aspect that this is closely related to environmental and climate equity and the process of international peripheralization. The sixth assumption of critical theory, that oppression is revealed in different ways, is another criterion that correlates not only with environmental and climate equity, but also with environmental racism.

Davy"s arguments for justice are taken into account when examining which mechanism uses which intumescence of justice and how procedural equity is addressed. In addition, a mechanism

needs to comply with the distributive and procedural equity aspect of Rawls to be an environmental equity mechanism.

Although environmental equity (EE) is assumed to be a less normative term than environmental justice (EJ), this research takes into account values and subjectivity in relation to EE due to critical theory. In addition, the principles of the EJ movement are used to evaluate different mechanisms on EE, and as previously noted, special attention is given to principles 1, 3, 5, 7, 10, 11, 14 and 17.

With this research, it can be stated that peripheralization correlates with the seventh epistemological assumption of critical theory and environmental racism, as both refer not only to the reproduction of systems, but also to the oppression of race, class, minorities and gender. Hence, a climate change mechanism is evaluated positively if it manages the allocation of LULUs or environmental goods in marginalized areas with certain races, classes or minorities such as indigenous peoples (excluding gender as it is not imperative for this research).

All the principles and approaches of Heyward are used as criteria to evaluate the different climate change mechanisms in relation to climate equity.

Research questions

The main- and sub-questions need to be rephrased and a distinction between procedural, distributive, environmental and climate equity is made in accordance with the above evaluation criteria:

1. To what extent, and based on which motivations, does the Yasuni-ITT Initiative address not only national and international environmental and climate equity, but also power imbalances?
2. Can the Yasuni-ITT Initiative be perceived as an alternative pilot project which addresses environmental and climate equity, as well as power imbalances?

These new main questions lead to the following sub-questions:

- What are the different existing climate change mechanisms and the critiques upon them from an environmental and climate equity perspective? (chapter 4)
- Which existing climate change mechanisms along with the critiques upon them in relation to the evaluation criteria of this research can be seen as motivations for the creation of the Yasuni-ITT Initiative? (chapter 4)
- Based on which national and local historical background of power imbalances, politics, social conditions, environment, economy, environmental equity and peripheralization of Ecuador is the Yasuni-ITT Initiative created? (chapter 5 and first part of chapter 6)
- To what extent does the Yasuni-ITT Initiative address national and international procedural environmental and climate equity, particularly in relation to participation of stakeholders? (chapter 6)
- To what extent can the Yasuni-ITT Initiative address distributive aspects of national and international environmental and climate equity? (chapter 6).

With these new questions and theoretic background in mind, this research continues with a methodological chapter (chapter 3).

3 Methodological Framework

3.1 Introduction

This chapter explores the methods and methodology used in this research, based on the criteria described in the previous chapter. The chapter first covers the general methodology of this research. The second section outlines the character of the research in terms of qualitative research, single case study, longitudinal research and ex post and ex ante evaluations. This is followed by a description of the research framework which includes a research model with the different phases of the study. The fifth section shows the methods used with this research: in-depth interviews, (participative) observation, literature, documents and media. The last section points out methodological remarks of validity, reliability and critical points of the study.

3.2 Methodology

With this study, the relationship between me (the researcher) and the Yasuni-ITT Initiative plus the stakeholders of the proposal is never stable with critical theory. As such, my position may have influenced the stakeholders and the Yasuni-ITT Initiative. Language, consciousness and subjectivity are taken into account with the methodology, the research process, stakeholders of climate change mechanisms and the outcomes of the research. As some groups are advantaged over others, it is imperative to „measure" types of power and power relations to examine whether oppression is revealed in relation to historical, current and future transformations. The latter is important since this study examines whether the Yasuni-ITT Initiative might address distributive environmental and climate equity for Ecuador in the future.

As this research is based on critical theory, the methodology is dialogical and dialectical, implying that this research requires a dialogue between the researcher and the subject(s) of research. Furthermore, according to Guba and Lincoln (1994, p. 110) the *„dialogue must be dialectical in nature to transform ignorance and misapprehensions (accepting historically mediated structures immutable) into more informed consciousness (seeing how the structures might be changed and comprehending the actions required to effect change) [...]"*. With critical theory, the researchers" aim is to criticize and transform social, political, cultural, economic, ethnic, environmental and other structures of society that constrain and exploit humankind by engagement in confrontation, and perhaps even conflict. Advocacy and activism are the keys to such research and as such, the researcher is facilitator as well as a leader, implying that the researcher is assumed to understand a-priori which transformations and critiques are needed. Hence, it is action based research where the outcomes of the research can assist me, the researcher, to transform ideas and subjects of the research to change certain aspects of the historical norm as well as to address and try to enhance international environmental equity (Crotty, 1998; Guba and Lincoln, 1994).

During the research, my position as a researcher has shifted from being an ´outside researcher´ to a ´campaigner´. First, my task was mainly to do research as an „outside researcher"; however, during my stay in Ecuador this changed. This was mainly due to my personal motivations to get more engaged with the initiative, as well as that I aimed at completely take the role as a critical theorist. As such, I became one of the contributors of the Yasuni-ITT Initiative document. In addition, after my stay in Ecuador, some of the Yasuni-ITT Initiative team and I suggested that I would support the campaign during the climate change negotiations in Barcelona (preparation meeting of COP15) and in Copenhagen (COP15) in 2009. Many would argue that the latter position has affected my objectivity and may have made me more subjective; however, I experienced the opposite. Through my active engagement, I could more clearly observe stakeholders" positions, influence and arguments; the significance of the initiative; the development of other climate change mechanisms; and above all, the shift of powers and influence of countries during the negotiations. The latter was very important as I could observe what the Yasuni-ITT Initiative and Ecuador could achieve in terms of power imbalances (which is shortly outlined in the conclusion of chapter 6). In addition, through my active engagement, I may have influenced different stakeholders" positions and arguments.

3.3 Research character

Qualitative research

This research uses a qualitative research approach because critical theory, environmental, and climate equity are bound to subjectivism and value-mediated-findings in relation to the objects and the researcher. This research does not strive to generalize, but aims at a contextual, detailed description of the study and its objects. Finally, as the researcher, I roughly knew in advance what to examine and the study unfolded itself during the research process, which is typical for qualitative research.

Single case study

A *case study* is a research strategy where in depth insight is gained through one or more space-time lines of objects or processes. Furthermore, a case study can be divided in other research cases, which are intensively examined in-depth through different data. A single case study is used with this qualitative research as the Yasuni-ITT initiative is a unique project. The initiative is examined in relation to the evaluation criteria of this research. Other climate change mechanisms (cases) and the history and context of Ecuador are also examined. However, the latter examinations are taken as motivations for the raison d'être of the Yasuni-ITT Initiative. In addition, they are used to examine whether indeed the Yasuni-ITT Initiative is a unique, single case which addresses environmental and climate equity (Miles and Huberman, 1994; Guba and Lincoln, 1994; Verschuren and Doorewaard, 2000).

Longitudinal research

This is a longitudinal, dynamic research which aims at studying developments over time and space due to the fact that such developments are important to examine with critical theory. This research uses all of the perspectives of a longitudinal research character: retrospective (situation in the past), current perspective (current situation) and prospective (future situation). The retrospective perspective is used with the historical background examination of Ecuador, together with power, social, political, economic, environmental and equity aspects. One of the challenges with longitudinal research is in deciding where and from when to begin the assessment. Due to time constraints, this research mainly aims at examining recent historical moments related to Ecuador, the Yasuni-ITT Initiative and the different climate change mechanisms. The prospective perspective is revealed through the examination of the different climate change mechanisms and the supposed implementation of each, in relation to the theoretical criteria since this research was conducted in 2009, when the climate change mechanisms were negotiated (Koppejan, 2008; Vennix, 2003; Verschuren and Doorewaard, 2000).

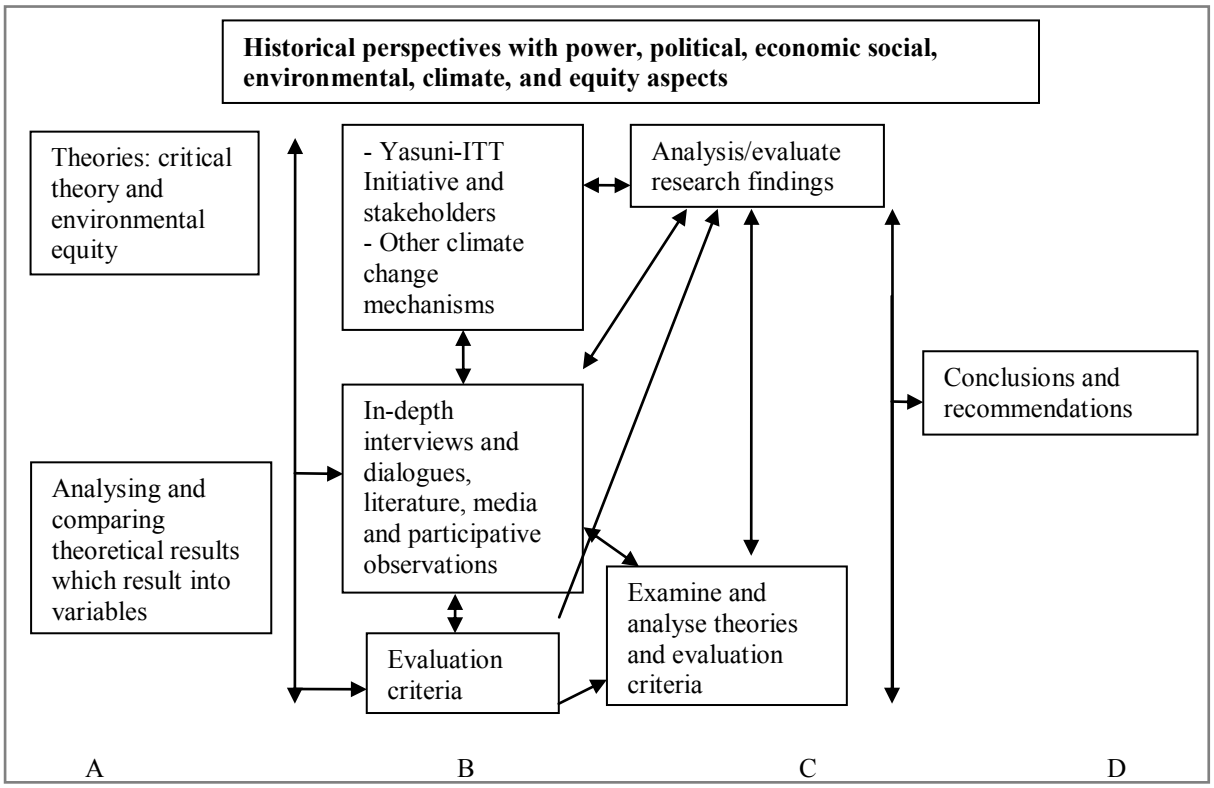
Ex post and ex ante evaluation

This research uses both ex post and ex ante evaluation. Ex post evaluation refers to an evaluation of an object based on past events and implementation. The ex post evaluation is used with the examination of the climate change mechanism which is already implemented: the CDM of the Kyoto Protocol. Additionally, the ex post evaluation is used with the evaluation of procedural aspects of the non-implemented mechanisms, being REDD, other proposals of countries, and the Yasuni-ITT Initiative. Ex ante evaluation refers to evaluations of objects which are not yet implemented but the evaluation can be based on aims and objectives. Such evaluations are based on hypothetical expectations. The ex ante evaluation is used with the mechanisms which are not yet implemented: REDD, other proposed mechanisms and the Yasuni-ITT Initiative. This ex ante evaluation is undertaken with respect to the distributive environmental and climate equity that is based on objectives from the proposals.

3.4 Research framework

To conduct useful research, it is important to structure the steps that need to be taken, as well as how and when they should be taken. Also, a schematic research model is shown in figure 2.1, in order to have a clear overview of the different aspects and expected outcomes of the research.

Figure 3.1 Schematic research model



The above boxes have varying implications and require distinct approaches. The theoretical approach (A) is undertaken by analyzing the different theories of equity, environmental and climate equity as well as critical theory, which result in the theoretical criteria of evaluation (B), which in turn are used to perform empirical research. The empirical research is based on a qualitative research approach, and includes examination sources of literature, in-depth interviews and dialogue with stakeholders, as well as (participative) observations. The analysis and ex post or ex ante evaluations of the climate change mechanisms and Yasuni-ITT Initiative in relation to the theoretic criteria and the analysis of the theoretical research (C) result in (D): conclusions and recommendations to the main research questions.
The data collection of the study is performed with a triangulate approach with literature, media, (participative) observations, as well as in-depth interviews and dialogues in order to improve the validity and reliability of the research.

3.5 Methods

The information needed to complete the research model can be obtained through several different sources. Data sources refer to the aspects of research objects, such as the Yasuni-ITT Initiative and its stakeholders, in a very general sense. Knowledge sources refer to insights and theories already developed which, in relation to this research, refer to existing documents and sources of environmental equity and critical theory (Vennix, 2003; Verschuren and Doorewaard, 2000).
Methods are bound to the methodological question and some scientists argue they are the same; nevertheless, this research refers to methods as the techniques or procedures used to gather and analyse data related to research questions or hypotheses (Crotty, 1998). Methods are bound to whether one chooses a qualitative or quantitative approach and, as this research uses a qualitative approach, the methods used within are time-consuming and intensive. They consist of: in-depth interviews and dialogue with stakeholders, (participative) observation, media and literature.

Dialogues and interviews: The dialogues and interviews contribute to the examination of historical, current and future transformation in power, political, economic, social, and environmental

aspects in relation to the Yasuni-ITT Initiative and climate change mechanisms. The dialogues and interviews are held face-to-face, or when conditions prohibit, through phone or email, with the assumption to be (pro) active as a researcher to transform environmental (in) equity within Ecuador. Since the dialogues are dialectical in nature (see methodology), they may confront and trigger the investigated to transform and change cultural, political, economic, and environmental aspects and knowledge. This was often undertaken by considering previous interviews, ideas and information gathered from various sources. The interviews are not only held with different stakeholders of the Yasuni-ITT Initiative, but also with other individuals, knowledgeable on the matter. It was not immediately apparent where the research would lead or what the situation in Ecuador was. As such, the three interviews in the Netherlands had a more exploring character. The twelve interviews in Ecuador are characterised differently as it was unambiguous from which point of view the study would start. Among interviewees in Ecuador were previous ministers, stakeholders of the Yasuni-ITT Initiative, politicians, scientists, activists, presidents of indigenous groups, locals, and some international stakeholders of the Yasuni-ITT Initiative. An overview of the interviewees and an interview guide is given in appendix I.

(Participative) observation: This research aims to transform international social, environmental, political and economic aspects, as well as address environmental inequity in Ecuador. As a researcher, and during the research, I became closely involved with the Yasuni-ITT Initiative and contributed to the development of the initiative by writing, reading, observing, commenting and criticizing it from a research point of view. As such, participative observation has been used explicitly with this research.

Media: Various media sources were examined in conducting the research on the following: past, current, and future developments around climate change mechanisms, such as the development of the new Kyoto protocol, CDM, and REDD. The developments of Ecuador and its position in the world as well as examinations regarding the Yasuni-ITT Initiative. As such, different media sources have been used, including the internet, newspapers and magazines.

Literature: Much literature was examined with this research in relation to critical theory, environmental equity, the Yasuni-ITT Initiative, current and future climate change mechanisms, international power relations and the history of Ecuador. The literature and evaluations of the Yasuni-ITT Initiative and the different climate change mechanisms are as up to date as possible, given the rapidly-changing nature of these issues. Moreover, one needs to take notice that this research has been written during the negotiations of a new climate change protocol and regime (Copenhagen, December 2009).

3.6 Methodological remarks

3.6.1 Validity and reliability

A researcher is usually obliged to deliver a qualitative, good research and hence, generally two different quality criteria need to warrant the research"s quality: *validity and reliability*. Research is valid when the applied procedures make the researcher capable of expressing true and real statements, relative to the content of the research. It is reliable if the results can be replicated by another researcher. Therefore it is important to replicate and generalize the research procedures and also ensure that the outcomes and data are transparent (Koppejan, 2008, pp. 29&30).

Validity

Whereas research based on critical theory is often not supposed to argue the study"s validity, since validity implies using terms from other theoretical perspectives such as logical positivism, some verification of validity can be accepted. A research based on critical theory may be valid when the analysis provides insight into the systems of oppression that limit human freedom and its usefulness to oppose and act against these systems. The problem with qualitative research, critical theory, and environmental equity is the role of values, interpretations and subjectivity, which can lead to invalid research. To have reliable, valid and „real" statements, it is therefore necessary to have reliable research in which data are made transparent, along with clarification of what it is based on.

In this case, the various methods are made transparent by adding the interview and observation guides as an appendix. All of the interviews are documented in separate files and, when needed, they

are open for others. Finally, due to my position as an outside researcher, it is necessary to take some objectivism in mind in order to interpret the non-outspoken thoughts of interviewees and data objects to have a clear and objective view of the situation (Clark, 2009; Myers, 2002).

Reliability

With critical theory, researchers bring a certain level of scrutiny with them that includes rooting out the connotations of what is left unspoken. Since critical theorists assume that the task is to expose hidden assumptions that guide research respondents‟ statements and initial analyses of data, a critical theory based on research is verified when other scientists confirm the outcomes. In relation to reliability, things spoken are traceable, while things unspoken depend on the interpretation of the researcher, the interviewee, the observation, situation, and other external factors. Critical theorists generally state that they do not seek to explain the „typical‟ person, but they generally aim to analyze peoples‟ possibilities and limits within, in this case, social, environmental, economic and political factors. Since individuals are part [subjects] of society and must act within that society, they all share a certain understanding and denotation. If that is not the case, they can be considered as crazy if they are not connected to the social realities and behaviours with those around them. Therefore, an individual can be perceived as a unit or starting point which leads to conclusions about cultural/social possibilities and limits. Peoples‟ behaviour or motivation are then not generalized, but rather their cultures and societies are.

For this research, this denotes that statements of individuals are examined with care and made transparent in such a way that can be replicated, even in the case of the unspoken. Since values and subjectivity play an important role within critical theory and environmental equity, these are considered along with the research and made transparent in the thesis, observations and interviews. Although qualitative research and single case studies are mainly criticized by their lack of generalization, it is not the aim of a single case, qualitative research, including this research. However, in relation to whether the Yasuni-ITT Initiative can be replicated and generalized, some generalization is used (Clark, 2009; Myers, 2002).

3.6.2 Other remarks

Although critical theory is used with this research, it is important to examine what the critique is upon this theoretical perspective, in order to understand and act upon it. Critics accuse critical theorists of tending toward elitism since they often focus on institutions and people with power and authority (elite) and can be unwilling to listen to experiences of those most adversely affected by current policies. In other words, critical theorists would not relate to the ones who they tend to help and support (the powerless). This research tries to avoid such errors by interviewing and observing all the stakeholders involved with the Yasuni-ITT Initiative, including those who are currently not participating, but will be affected by the proposal such as contacted indigenous groups, locals of the Yasuni Biosphere Reserve and others who are most affected, disadvantaged and powerless.

Critics also assume that critical theorists believe that they are not only more capable of analyzing a situation than others, but are also better equipped to offer a prescriptive plan of action since they tend to have the idea that through their research, they can bring about a better and more equal world. Furthermore, „*Critics charge that this often brings theorists outside of their realms of expertise so that the insights they offer are naive and unworkable in the contemporary setting"* (Clark, 2009, p.3). With this research, it is too idealistic to presume that I would be able to change the course of developments and influence power relations in Ecuador, let alone internationally in such a time frame and as an individual, masters student. Nonetheless, I have been trying to influence the process and development of the proposal as much as possible and so far as my capacities and circumstances have allowed me by assisting indigenous peoples in developing projects in the Yasuni region and in discussing aspects of the performance of the Yasuni-ITT Initiative with different stakeholders.

Although this research tries to be as updated and coherent as possible, it is impossible in this timeframe to take into account all of the developments regarding the post-Kyoto protocol negotiations and with it, CDM and REDD policy developments. As such, this research analyses these mechanisms previous to the post-Kyoto negotiations in Copenhagen in 2009.

4 Climate Change regimes and its equity related mechanisms

4.1 Introduction

This chapter evaluates the climate change regime and mechanisms in relation to the theoretic criteria. Firstly, a description is given of the function and statements of the UN Framework of Climate Change Conferences (UNFCCC), together with the Kyoto Protocol: the only international climate change protocol. This is followed by a short analysis of the Kyoto Protocol in relation to environmental and climate equity. The second section examines the Clean Development Mechanism (CDM): a mechanism of the Kyoto Protocol which allows developed countries to invest in sustainable development projects in developing countries to „off-set" their own GHG emissions. In this section, critiques of the CDM are outlined along with an evaluation in reference to environmental and climate equity. Subsequently, a description of REDD is given: a proposed mechanism for Reductions of Emissions on Deforestation and Degradation. The fourth section shortly describes other climate change mitigation proposals made by Bolivia, Arab countries and Indonesia. All the mechanisms are evaluated in a similar order: they are first subjected to an evaluation of Davy"s arguments for equity, followed by an evaluation of procedural and distributive equity. The distributive equity evaluation are combined with the EJ principles of evaluation, peripheralization and environmental racism as they are closely related to each other. Subsequently, the mechanisms are evaluated in relation to climate equity. It should be noted that there are differences between the evaluations of the CDM and the other mechanisms: the first is subjected to an ex-post evaluation with regards to all the theoretical criteria, whereas the others are subjected not only to an ex-post evaluation with regards to Davy"s arguments and procedural equity, but also to an ex-ante evaluation with regards to the distributive, environmental, and climate equity aspects, since those mechanisms are not yet officially in practice. Finally, the chapter concludes with an overview of the mechanisms and equity related issues.

4.1.1 The UNFCCC and the Kyoto Protocol

4.1.2 The Conferences and the Protocol

During the 1980s and 1990s, UN countries negotiated sincerely about climate change due to growing concern regarding this phenomenon. As such, in 1992, at the UN Conference on Environment and Development in Rio de Janeiro, the UNFCCC was adopted. The UNFCCC includes ultimate objectives, principles and obligations for developed and developing countries in relation to climate change and its consequences. The UNFCCC organized the first Conference Of Parties (COP) in 1995 and henceforth, COPs are held annually in different countries. During these conferences, parties come to an agreement about a climate change policy with which developed countries (Annex I countries) need to take the lead in modifying long-term GHG emissions trends (mostly CO_2) by enacting mitigation policies and measures. In addition, their emissions need to be stabilized at 1990 levels, and their annual GHG inventories and implementation reports must be submitted through the COPs every three years. The Non-Annex I countries, including 130 developing countries, together with Mexico, Korea, Central Asia, and other countries such as Kazakhstan, need to prepare inventories and national programmes addressing climate change. Yet, they are not obliged to specify their policies and measures that reduce GHG emissions or enhance sequestration through carbon sinks, such as forests. The UNFCCC agreement also aims at mandating resource flows from the wealthiest parties to non-Annex I parties with financial, technological, and adaptation assistance provisions. Additionally, the Annex I countries are obliged to assist developing countries that are vulnerable or unable to pay climate change adaptation costs. Through many COPs, it was decided to give special attention to:

- countries that undergo a process to market economy, i.e. previous soviet countries
- poverty and social development priorities of developing countries,
- specific geographic and economic circumstances of particular groups of developing countries, e.g. small islands,
- the needs of least developed countries (LDCs) and,

- those relying heavily on production and consumption of fossil fuels by certain developed countries, e.g. Arab and OPEC countries.

The UNFCCC established an international mechanism to supervise the implementation of the commitments of the parties.
In 1997 the COP concluded that the commitments to GHG abatement efforts were insufficient and therefore, it determined that a special protocol was necessary: the Kyoto Protocol. The Kyoto Protocol was rectified by most UN parties in Rio de Janeiro (1998) and the Marrakech Accords (2001) were approved to provide details concerning different instruments, funding mechanisms, and a compliance mechanism.

The Kyoto protocol sets binding targets for 37 industrialized countries and the European community, of six different greenhouse gas emissions (given in Annex A of the Protocol). „*The Annex B countries – that is, the OECD and the Economies in Transition – agreed to limit greenhouse gas emissions to an average of 5.2 per cent below 1990 levels in the commitment period 2008-12"* (Hamilton, 1999). The sectors which need to reduce emissions are: energy, industrial processes, solvents and other product use, agriculture, and waste (excluding aviation, marine, and forestry sectors). The commitments of the Kyoto Protocol differ from the original Rio Treaty in the sense that it includes absolute national emission caps for Annex I countries, to be achieved from 2008 till 2012 and the progress of these countries must have been demonstrated in 2005. In addition, all parties should domestically undertake a minimum of abatement efforts which are supplemental to Kyoto Protocol measures (articles 6, 12 and 17). Many petroleum producing developing countries wanted to minimize the potential adverse economic impacts they might experience as a result of mitigation policies implemented by Annex I countries. Therefore, the Kyoto Protocol gives a higher profile to issues concerning economic impacts of response measures on non-Annex I countries, which is different from UNFCCC targets.
The Kyoto Protocol officially ends in 2012. As such, a new/post- Kyoto Protocol needs to be agreed upon, ratified and implemented before 2012. The targets for the post-Kyoto Protocol were set during the conference in Bali in 2009 with the Bali Action Plan at a climate stabilisation goal of 2°C above original levels.

The Kyoto protocol states that Annex I countries can use three flexible mechanisms for achieving GHG emission reductions: the Emission Trading Scheme (ETS), the Joint Implementation (JI), and the Clean Development Mechanism (CDM). All of these mechanisms should contribute to the ultimate objective of the Kyoto Protocol and the UNFCCC. It is possible for party groups to redistribute efforts together to reach their targets through using Joint Fulfilment Provisions (JFP) (article 4) and until now, the EU is the only user of JFP and ETS through the EU ETS (see appendix IV). The JI includes sustainable development projects in other developed countries and the CDM includes sustainable development projects in developing countries. The CDM is explained further in the next section since it is an important mechanism for the South (Gupta, 2002; Hamilton, 1999; UN, 1998; UNFCCC, 2009; Yamin, 2005/8).

4.1.3 Kyoto and climate equity

Some Parties have concerns about the current protocol and the extent to which it addresses equity, however; there are a number of climate equity related principles on which the Kyoto Protocol is based. Since each developed country has emission reduction targets as a percentage of the 1990 emission levels and since the targets were individually negotiated, the Kyoto Protocol is mostly based on the sovereignty and comparability approach. However, „*Many developing countries have criticized the Protocol because of its basis in the sovereignty principle, which they see as perpetuating international economic inequalities. Most have, however, supported the Kyoto Protocol insofar as it binds only developed countries"*(Heyward, p.).

Developing countries argue that since the Kyoto Protocol only targets developed countries in emissions, it is a justifiable implementation of the PPP as well as a recognition of developing countries‟ economic and basic needs by not assigning targets in the first term to the non-Annex I countries, thus corresponding to „common but differentiated responsibilities‟. PPP is furthermore

taken into account as developed countries invest in developing countries through the CDM when surpassing their emission targets. On the other hand, some major developed countries have argued that also (major) developing countries should have targets to address climate change as global commons since their GHG emissions increase progressively. In addition, some major developed countries believe that developing countries will gain a competitive advantage in economy by not having emission targets, which can be linked with the „free rider" problem. Moreover, the Kyoto Protocol becomes generally less economically viable as less countries participate and as the cost of emission reductions rise. These problems correlate with the comparability approach, capacity concerns of domestic constraints and the responsibility concern of proportionality between effort and benefit. Mainly to decrease overall GHG emissions, the objective of the new Kyoto Protocol will include targets for major developing countries.

The Kyoto Protocol as such, does not provide a sustainable basis for achieving climate change mitigation and emission reductions. Additional commitments of major emitting developing countries need to be stated in Copenhagen 2009 with the creation of the new Kyoto Protocol, which would be implemented after 2012.

4.2 CDM

This section includes a description of the CDM, the critiques related to the mechanism as well as how it evaluates (ex post) the mechanism on environmental and climate equity.

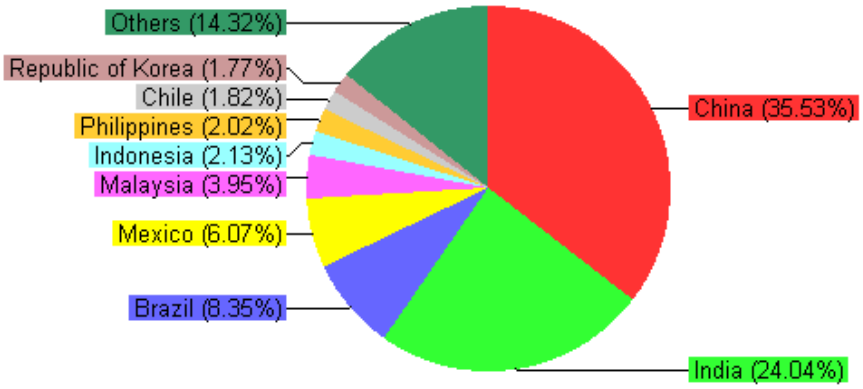
4.2.1 The Mechanism

The number of CDM projects increases rapidly in different developing countries. The CDM was set up originally as a Clean Development Fund for developing countries, with which developed countries would donate to the Fund due to non-compliance of their emission targets. The Fund transformed into a project-based carbon finance mechanism during the Kyoto negotiations in 1997 (Article 12). The rules of and operations for CDM projects were decided upon in Marrakech in 2001 which not only include a wide range of six GHG emission mitigation measures, but it also aims at increasing carbon sinks through forestry as well as sequestration, e.g. forestation and reforestation (both are included in Land-Use, Land-Use Change and Forestry activities (LULUCF)). However, deforestation abatement efforts and forestry conservation projects are excluded from being mitigation measures of the CDM and a cap needs to limit the amount of carbon that can be credited through sinks projects to 1% of base-year emission of the claiming Party, times five (Olsen, 2004, p. 5-9).

The CDM allows governments or private entities of Annex I countries to invest in and implement emission-reduction projects in developing countries. The Annex I parties receive Certified Emission Reduction (CER) credits for their investments, each equivalent to one ton of CO_2. Not only can the CERs be traded and sold, they may also count against national reduction targets of Annex I countries. In other words, the CDM provides funding to offset absolute GHG emissions of developed countries committed to GHG targets under the Kyoto Protocol. The CDM is an important part of the emerging international carbon market and it aims to achieve sustainable development in developing countries, cost-effective reduction of GHGs in developed countries, and technology transfer to developing countries. The basic principle of the CDM is that all parties benefit from the mechanism: Annex I parties receive credits for its GHG emission reductions, possessors of CDM projects receive contributions to finance the project, and host countries receive benefits related to their national sustainable development objectives. If CDM projects are well designed, they could offer attractive opportunities for supporting development priorities of host countries as revealed in general national development plans, local environmental plans, and other social development policies (Olhoff et al., 2004; UN, 1998).

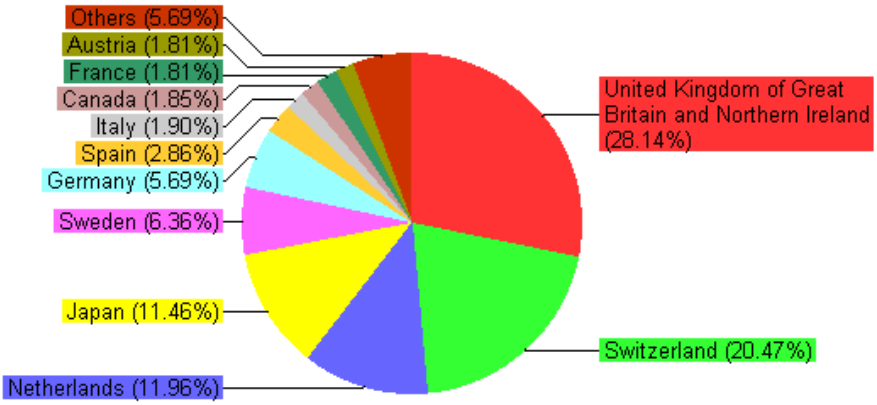
The data of the following figures and charts of CDM projects are recent, however, they can be outdated since the number of projects increases rapidly.

Figure 4.1 Registered CDM projects by host parties. Total: 1,976



Source: UNFCCC, December 2009.

Figure 4.2 Registered projects by Annex I and non-Annex I parties



Source: UNFCCC, December 2009.

4.2.2 General critiques

Stern states that, at least until 2007, the CDM has played an important role in developing co-operation between developed and developing countries and it has assisted an understanding of the main GHG abatement opportunities. Although the mechanism might stimulate strong private sector interest in climate change mechanisms and co-operation, several problems exist with the implementation of the CDM, and financial flows are limited. The role of the mechanism is much debated in relation to additionality, leakage, high transaction costs, policy uncertainty, and sustainable development, as well as geographic discrimination, forestry, and technology risk and transfer (Stern, 2007). Some of these critiques are described hereafter in more detail.

The CDM projects need to comply with *leakage* (overall levels of GHG emissions do not increase or remain high due to shifts of emissions from other projects in other areas), and *additionality* (investments and projects under the mechanism need to be additional to existing ones and GHG emissions abatements need to be real and reduced below those which would otherwise occur in the absence of CDM). Yet, different views exist on the actual additionality and leakage of CDMs. Stern (2007) states that the projects do not represent additional net GHG emission reductions over and above those required by developed country limits. In addition, the projects would not truly contribute to the incentives required to abate future GHG emissions in developing countries. On the other hand, according to Huang and Barker (2009), CDMs do have a significant impact on GHG emission reductions.

Despite these debates, it remains clear that the costs of GHG externalities for firms and consumers in host countries or for goods exported from all countries are not internalized in the mechanism. In addition, while the CDM acts like a subsidy and reduces emission from a particular project, the demand for high carbon goods and services across the entire economy remains unaffected. Therefore, the overall level of GHG emissions can remain high or even increase (leakage and non-additionality) (Schneider, 2007; Stern, 2007).

In relation to financial flows and costs, Stern (2007) states that since there are incentives to manipulate the system to increase the rewards received, project based carbon finance (i.e. CDM) creates issues of moral danger and gaming and thus, it can increase policy uncertainty and other issues. Furthermore, complicated procedures are involved for accruing CDM projects and demonstrating the project‟s additionality, which lead to high transaction costs. Establishing accurate methodologies for energy efficiency is difficult in sectors dominated by small and medium-sized businesses, transport infrastructure, and demand management which may be more relevant to developing countries. Although the CDM provides a funding flow on the basis of the carbon price, the learning costs of higher risks are not necessarily covered using new technologies, including advanced renewable energy projects and technologies. Projects with longer payback periods may be affected by other capital market failures where benefits of long-term energy savings occur beyond the standard payback time in investment appraisal or are heavily discounted both for time and uncertainty. This process also affects small-scale projects (UN, 1998).

The CDM aims to improve sustainable development (SD) in developing countries. The World Commission on Environment and Development with its „Our Common Future" report (1987) defined SD as „development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs". The suggested pragmatic approach to evaluate CDM projects in relation to SD is to focus on national development criteria related to economic, environmental and social aspects. The SD criteria are then mostly related to intergenerational equity and poverty. However, host countries of a CDM project can determine whether the projects contribute to SD as they need to implement their own national SD criteria within the Kyoto Protocol. As such, host countries base SD criteria on their development priorities and hence, criteria of SD vary across countries. In addition, trade-offs exists between objectives of the projects in favour of cost-effective reductions of GHGs for developed countries and the CDM plays a limited role in directing investments to developing countries.

Different scientists have varying views on the CDM in relation to SD of which many coincide. „*From a sustainable development perspective, "the CDM does not work" in that it does not drive SD and does not fund renewable energy projects or carbon forestry projects with high development co-benefits"* (Olsen, K., p. 13). However, the CDM works perfectly in the sense that it produces lower-cost emission reductions. In addition, if a project contributes to SD at the project level, it might have a minor but positive effect on the SD at the national or even global level. Moreover, Huang and Barker (February 2007) suggest that the development of CDM projects *could* cause a decline in GHG emissions and *does* have the potential to assist developing countries to reach their SD objectives. However, they also mention that until at least 2007, the CDM has achieved little in gaining a high level of environmental integrity and assisting developing countries to realize SD. For example, the Netherlands have a CDM forestation project in Ecuador at the (northern) coast where old forests are replaced by eucalyptus, which uses more drinking water than the old forest. Furthermore, many black and poor people live in that area and they have additional problems of their own, such as lack of drinking water (Huang and Baker, February 2009; Journal of Agrarian Change, 2009; Olhoff, et al., 2004; Olsen, 2007).

Non-Annex I countries compete strongly for CDM investments by creating an incentive to set low sustainability standards. Countries with a strong enabling environment for private sector investments, countries further away from the equator, and countries with higher elevations not only tend to attract and instigate more CDM credit flows, but also projects. Although larger exporting countries have more advantages in obtaining projects, larger natural resource exporting countries have fewer opportunities for CDM credit flows and projects. Liberal markets increased national capacities to use funds properly in stable countries in terms of economy and politics as well as in countries with strong legal mechanisms. This indicates that natural resource abundance may not necessarily be attractive to CDM projects. These developments indicate that most CDM projects are transition phase

countries or (stable) middle-income countries such as China, Brazil, India and Mexico, as can be perceived in Figure 4.1. These results shed light on the geographic determinants of uneven developments of the CDM across countries and regions, which can have implications for developing countries in terms of international cooperation and national capacity building to effectively access the CDM to fulfil their SD objectives. Huang and Barker (March, 2009) suggest that geographic considerations should be introduced into the econometric and theoretical cross-country studies of climate change and mitigation. Several measures are already taken to address geographical distributions (Huang and Barker, March, 2009).

Although forestry conservation and deforestation abatement efforts were excluded as being possible CDM projects, research has highlighted the importance of carbon forestry sinks‟ potential link with poverty alleviation and other development benefits at the local level. *„[…] it cannot simply be assumed that development priorities of forest and resource users are furthered through CDM forestry projects"* (Olsen, 2007, p.9). This conclusion is related to the critique on the carbon market and market mechanisms in general to provide real and equitable benefits for developing countries. The aims of community development of CDM forestry projects were separated from the carbon contracts, and instead of SD initiatives, farmers can implement forestry projects. However, middle-income communities and relatively well-off farmers with forest property rights benefit more from forestry projects than poor or female-headed households with no land titles and less formal access rights to the forest resources. CDM forestry projects can achieve the aim of SD for local people when the projects are carefully designed and not implemented by existing institutions for management. If this is not the case, often the mechanism can result in negative welfare implications for the poor, inequity, and SD (Stern, 2007; IPCC, 2007; Olsen, 2007, p. 9 & 10).

Most CDM projects are only initiated by developed countries in developing countries: the so called „one-sided CDM‟, which was initially questioned, but allowed. It was questioned since developing countries are not obliged to invest or initiate projects themselves. According to many studies, with this „one sided CDM‟, there is little technology transfer to developing countries in certain sectors, but in other sectors such as reducing methane emissions in landfills, there has been technology transfer. Even so, within some sectors, the technology in developing countries is already sufficient (Huang and Barker, March 2009; Dutt and Gaioli, 2007; Olsen, 2007; Olhof et al., 2004).

To conclude, the CDM may remain an important instrument not only to combat climate change and assist developing countries to develop sustainably, but also to increase market flows, change developing countries, and increase corporation between and within countries. Nevertheless, with the mechanism, there are few projects implemented in the poorest countries, SD is barely achieved, the environmental integrity of the projects falls short, and technology transfer is low. This certainly raises questions and concerns regarding equity *„[….] and the appropriate mechanisms to tackle low-carbon infrastructure to support wider access to energy for poor people*‟ (Stern Review, p. 508) (Schneider, 2007).

4.2.3 Equity related critiques

Davy's arguments for equity

The CDM is initially set up for wealthier, Annex I countries to offset their surpassed GHG emissions and it assists the poorer, non-Annex I countries, to reduce poverty and achieve SD. However, this is often not achieved and the poorest countries and people are frequently left out of the mechanism. Therefore, one can argue that the CDM is mostly an elite, liberal, argument for equity in the sense that the mechanism not only favours the „elite‟, the Annex-I countries, above the „poor‟, but also that the „elite‟ benefits the most by earning CERs and often transferring the project‟s benefits back to themselves. Additionally, the instrument somehow includes the argument that, like the argument in favour of liberalism with elite equity, developing countries would be eventually better off through the market and benefits would filter down into the society and to the poor.

Procedural equity

It can be questioned whether the CDM addresses national and international procedural equity. The initial mechanism (the development fund) proposed by Mexico, later became the CDM and was set up and agreed upon with all the Parties of the COP, thereby, participation and procedural equity was present. However, as power relations among stakeholders of the UNFCCC may well be unequal, it is often the resource-rich stakeholders (developed country parties) that define the terms for carbon trade and the CDM. Thus, the developed countries and their counterparts participate and define the rules of the instrument.; The UNFCCC accredits, agrees on, and evaluates the projects. Herren (2009), discovered that low-power-groups", being low income countries that suffer from long term handicaps to growth or structural weaknesses,, potential to influence current negotiations of the UNFCCC and the CDM may well be restricted by decision making procedures of the COPs and by the diverging interests among these groups. Furthermore, Herren argues that current decision-making procedures discriminate against low-power groups" participation in negotiations on the Post-Kyoto, the CDM, and even endanger a possibility of a Post-Kyoto agreement. Moreover, low-power groups together generally do not cooperate and comment on Post-Kyoto negotiations as much as they could, in spite of their shared interests. So, with regards to policy decision-making and evaluation of the CDM, the mechanism has not achieved international procedural equity in all its forms. Perfect procedural equity is not sufficiently addressed since the outcome of the mechanisms" procedures was not fair because the developed countries transformed the Development Fund into the CDM. In addition, the mechanism probably does not guarantee fair outcomes, since only the „elite" really benefit from the mechanism. Furthermore, no current method guarantees a fair outcome of the CDM projects implemented in developing countries since the UNFCCC and developed countries influence strongly the methods, and developing countries base the SD evaluation criteria for the projects on their development (economic) aims. Hence, the mechanism may not even (completely) address imperfect procedural equity. Finally, the influence on procedures with regards to the development of the CDM, the projects, and the evaluations has not been fairly distributed and hence, pure procedural equity is not accurately addressed.

Distributive equity

The CDM might not address distributive equity as it does not accurately address procedural equity and developed countries are the ones actually benefitting from the mechanism by earning CERs, and by (generally) transferring project"s benefits back to themselves. Related to the critiques described in the previous section, distributive equity is endangered with the CDM since SD in developing countries is hardly achieved and environmental integrity is often discussed. Additionally, projects are rarely implemented in the poorest countries, due to a kind of geographical discrimination which is strengthened by strong competition between non-Annex I countries. Even more, developing countries with CDM projects hardly benefit from the investments made by Annex I countries. Furthermore, since global GHG emissions are not reduced through the CDM projects (leakage and additionality issues) and since developed countries offset their surpassed emission targets, intergenerational equity is often not addressed. In addition, it is foolish to believe that in the long run, the CDM, on its own, will address environmental equity for *all species*. This is because the possible non-enhancement of intergenerational equity, the problems with non-additionality and leakage, and CDM projects" environmental integrity is often discussed. Moreover, sometimes, the local environment (flora. fauna and humans) needs to be shifted aside for a CDM project.

Since the achievement of SD and environmental integrity are questioned, one can question the mechanism"s additionality to combat international peripheralization, environmental racism, and environmental inequity. International peripheralization still exists since LULUs (Locally-Unwanted-Land-Uses) are still abundantly present in the South, particularly in the poorest countries. Moreover, the CDM might even allocate LULUs instead of PIMBYs (Please-In-My-Back-Yards) in developing countries since some CDM projects do not achieve SD and/or environmental integrity and these may often be placed in marginalized areas with people of certain race and/or colour. In addition, many indigenous peoples and other minorities do not benefit from the implemented projects. One could also argue that environmental racism is not addressed since the projects are mostly allocated in the more developed countries, and not in the poorest ones. Furthermore, as Herren (2009) stated, current

decision making procedures within the COPs even discriminate low-power-groups‟ participation and their rights with the implementation of the projects. Related to all this is that the CDM does not clearly define that projects should protect Human and Indigenous Rights (EJ principle 10). The rights are most of the time not explicitly addressed through the implementation of the projects (Herren, 2009; Heyward, 2007).

Climate equity

The CDM may be based on the sovereignty approach of the *equality principle* since developed countries can „off-set‟ their overshoot of their GHG emission targets by investing in projects in developing countries and they earn credits for these investments. One can carefully state that the CDM somehow reflects the comparability approach since developing countries also address GHG emissions through the implementation of the supposed to be sustainable development projects which should be additional and non-leakage based.

The CDM may well be based on the Polluter Pays Principle (PPP) of the *responsibilities principle* since the CDM states that all countries have some obligation to address global climate change in accordance with their Common But Differentiated Responsibilities (CBDR), but it holds more responsibility for major polluters, being developed countries. In addition, the CDM addresses PPP as the developed countries‟ responsibilities are based on historical and current emissions. At the same time, it holds host countries of the projects responsible for current and future emissions in some way as the projects implemented should abate GHG emissions in developing countries. Hence, it also addresses to some extent the major critique on PPP as that everyone is a polluter, although to differing extents, and climate change is a continuous problem.

The CDM also aims at addressing the *capacity principle*, in which the countries with the greatest capacity address the problem. In this case, Annex I countries should contribute more than the countries with less capacity (developing countries). Furthermore, the economic situation and resource availability is taken into account with the mechanism since Annex I countries not only have more access to technologies and institutional capacity, but also have the financial and human capital necessary for the development and implementation of climate change mitigation projects. Additionally, Annex I countries share technologies through the CDM with developing countries to improve the economic situation and resource availability in the latter countries. However, as one could comprehend in the previous section, the improvement of the economic situation and resource availability is hardly achieved through the mechanism. So, the mechanism does not actually address the economic situation and resource availability approach. The mechanism should address the basic needs approach since the Kyoto Protocol states that developing countries, and particularly LCDs, should be given priority over addressing climate change to address poverty. The CDM indeed takes this into account by not obliging developing countries to finance the projects. Additionally, the UNFCCC aims to reduce GHG emissions in a way that allows for economic development in a sustainable manner and for basic needs to be met. However, as SD is hardly achieved with the CDM and financial flows of the projects mainly go to the investing country, addressing poverty and basic needs is not necessarily stimulated and economic development does not necessarily proceed in a sustainable manner through the mechanism in the host countries. Therefore, the basic needs approach is only partially met through the mechanism. Although financial benefits for developing countries are low with the CDM, those countries can address domestic constraints much more rapidly in the host countries than in the investing countries. This is mainly because the poor host countries are not compelled to make costly investments in climate change mitigation actions since developed countries do this for them. However, the question of good governance, corruption, and other problems which are often apparent in developing countries and which can also be conceived as domestic constraints, are not addressed since those governments are even left aside from the CDM or they do not address such aspects themselves. Finally, the mechanism aims at addressing the opportunities approach since attention is given to how many opportunities and possibilities certain countries have to transform their economies as well as their societies into energy efficient ones in a cost-effective manner. Indeed, the instrument addresses the opportunities approach since the developed countries make cost-effective reductions not only at home, but they can also pay for their surpassed GHG emissions by investing in poorer countries. Nevertheless, the problems of the opportunities approach are not entirely addressed

with the CDM since countries which are highly dependent on high carbon sectors are not compelled to address climate change mitigation as much as others. As such, the instrument does not reckon that these countries might have fewer opportunities to transform their economies later to more energy-efficient ones. Additionally, many economies in transition implement approved CDMs; however, the poorest countries are unable to execute this due to lack of opportunities and good governance, and thus, social equity is not entirely addressed. Finally, with the CDM, the question of who should pay for the emissions of export goods, the importers or exporters, stays unrequited and mainly the importers (developed countries) benefit from the projects (Herren, 2009; Heyward, 2007).

4.3 REDD

This section includes a description of the background and motivation for including Reductions of Emissions from Deforestation and Degradation (REDD) into climate change mitigation efforts. Furthermore, it depicts the challenges REDD is facing to be included into the new climate change protocol. Finally, the section evaluates REDD on environmental and climate equity, on the basis of the theoretical criteria of evaluation.

4.3.1 The mechanism

Forests are not only important for biodiversity, many indigenous peoples, and economy, but also for climate change mitigation. The emissions of GHGs from tropical deforestation were in the 1990s approximately 1.6 billion tonnes of carbon per year, being 20% global CO_2 emissions (IPCC, 2007; Parker et al., 2009). Moreover, besides offsetting anthropogenic GHG emissions through being carbon stores, absorbing CO_2 from the atmosphere, and maintaining high levels of evaporation from canopy, forests provide ecosystem services such as nutrient recycling, disease regulation, and functioning as water storages. Forests are important for many local and indigenous communities as they depend on forests as a source of fuel, food, medicines, and shelter. Causes of deforestation and degradation are not only manifold and intricate, but also vary among countries. Forest loss can come from large-scale agriculture (many times beef and soy related), petroleum exploration activities, poverty and population pressure, as well as the furniture/timber market.

Until recently, avoiding deforestation and degradation as a climate change mitigation strategy and a CDM project was unpopular, not only due to worries that emissions from forest loss are hard to measure, monitor, and control, but also due to concerns that the benefits from reducing emissions of forest loss would be on short terms and suffer from leakage. Other problems would be that the focus on deforestation in developing countries would lessen the incentive of developed countries to reduce their own emissions and including forests in trading schemes would flood carbon markets plus it would make other measures types of emission reductions unprofitable. Finally, the fear existed that a „fines and targets" approach to forest protection would offer a new opportunity for governments attempting to relocate and disfranchise local communities. Although the Kyoto Protocol provides few incentives for reforestation projects and no incentives against deforestation and degradation, there has been a modest trade in carbon offsets through forests in the regulatory and voluntary market under the protocol. The voluntary market supports tree planting and forest management, but forestry is unpopular in the regulatory market due to high transaction costs with the CDM and other limitations such as that forestry is excluded from the EU ETS.

Stern (2007) noted that it could be a cost-effective route to reduce emissions from deforestation and degradation in developing countries to combat climate change. In addition, around 2007 the recognition grew that global emission reductions would not be achieved without the support of forest mitigation efforts. Even so, the Bali Action Plan, adopted in December 2007 at COP 13, calls for enhanced cooperation on policy approaches and positive incentives on issues related to reducing emissions from forest loss in developing countries since without this, the climate stabilisation goal of 2°C might not be reached. As such, many different proposals addressing this problem have been put forward and the most important one, from Papua New Guinea and Costa Rica, eventually became REDD: Reductions of Emissions from Deforestation and Degradation.

REDD is primarily about emission reductions and basically states that developing countries that are willing and able to reduce emissions from deforestation and degradation, should be financially

compensated in doing so by developed countries. Within climate change negotiations, REDD is being discussed fervently and even REDD+ as well as REDD++ have been developed: the „+" stands for including conservation, sustainable management of forests and enhancement of forest carbon stocks; and the „++" stands for carbon stock retention initiatives, achieving multiple benefits and encouraging environmental and social safeguards through conserving biodiversity, protecting water resources, as well as improving community livelihoods. Even so, REDD could eventually accomplish more by addressing rural poverty and sustaining vital ecosystem services (Parker et al. 2009).

4.3.2 Challenges

If REDD is to be included in a post-Kyoto Protocol, a decision about how a mechanism should look and what it includes needs to be agreed upon with the new climate change protocol. Therefore, during current negotiations, REDD has been one of the main discussion points. Initiatives of, and funds for, REDD are increasing and pursued by, inter alia, countries, international financial institutions, development banks, and several UN bodies. The latter have set up a program to not only assist developing countries preparing and implementing national climate change strategies, but also to support the development of solutions and standardized approaches based on sound science for a REDD mechanism linked with the UNFCCC. The program examines whether, and how, REDD could be a climate change mechanism and tries to help empower countries to manage their REDD processes and projects. Besides, the program might facilitate access to financial and technical assistance tailored to specific needs of countries.

Although REDD would extend the mitigation options offered by the CDM, and therefore it would be a supplement to the CDM, REDD is different from the CDM in the sense that rewards are accrued nationally or sub-nationally rather than through small scale projects. However, any international provisions about forests and development in an UNFCCC agreement might be limited with this alternative of national sovereignty. *„Possible government roles would seem to be as: seller; buyer from a sub-national devolved payment system; or regulator and/or broker"* (Cotula and Mayers, 2009, p. 2). Many parties of the COP are in favour of a mixed approach between market mechanisms based on carbon trading and donor compensations as being the funding mechanism for REDD. However, the choice of funding mechanism for REDD has implications not only for the resultant policy architecture and the impact this might have on emission reductions, but also for human and indigenous peoples" rights and thus, for its equity related impacts.

REDD should provide incentives for all rainforest countries if it is to be successful because when leaving out significant groups of countries, deforestation will shift to those regions, leading to GHG leakage. However, leakage may actually indicate a healthy economy as in response to REDD-induces barriers, production factors glide to new opportunities, keeping welfare loss minimal (Angelsen, 2008). Secondly, the incentives should be at the scale required to solve forest loss since if they are insufficient in value, they will not out-compete other legitimate economic activities which drive deforestation and degradation such as logging. *„Third, the citizens of forest countries – especially those who depend on the forest for livelihoods – must be active participants in framing a solution"* (Parker et al., p. 5). There would be no solution to forest loss without the support of local populations. Challenges regarding REDD, which certain proposals contain, include:

- monitoring, reporting and verification for national inventory purposes,
- capacity building and guaranteeing enabling policy environments, including land tenure
- minimising appalling incentives,
- addressing leakage and additionality issues,
- including human and indigenous peoples rights,
- extending stakeholders" participation,
- extending financial flows to locals, for reducing poverty and enhancing sustainable development,
- obtaining high quality data from the Land-Use, Land-Use Change and Forestry sector (LULUCF),
- solving problems around scope, leakage and permanence and,
- clear definitions of forest, deforestation, and degradation.

In addition, national efforts should be made by developing country governments to address forest loss if REDD is to function effectively and as the Organisation for Economic Co-operation and Development (OECD) states that „public funds cannot and should not substitute for weak environmental policies". Furthermore, other governments should address policies which influence the forestry sector at the international scale such as biofuels, agricultural, energy, timber, and furniture policies. Otherwise, REDD would focus on emission reductions alone, instead of integrating not only other approaches and the need for recognition of forest complexities, but also different drivers of deforestation and degradation from beyond the forest sector as well as integrating various aspects of forest-linked mitigation, e.g. emission avoidance, carbon sequestration, and adaptation to climate change. Finally, REDD needs to be flexible and able to evolve as national circumstances across developing countries change. Hence, REDD needs to aim at a long term vision.

4.3.3 Equity related issues and challenges

Davy's arguments for equity

REDD was initially proposed by developing countries but later on, many others adopted and developed the idea. Many of the participating countries are poor, yet developed countries are also proposing REDD schemes. Due to the participation of the „poor", the „most" and the „elite", REDD combines different arguments for equity in developing the REDD scheme. Additionally, the REDD mechanism will not only be for the „elite", as with CDM, but also for the „most" and the „poor" since the projects will be (and some are already) implemented and monitored by the „most" and the „poor". The „elite" (developed countries) will receive carbon credits for their investments in REDD projects. Therefore, REDD has an argument for equity mostly for the „poor" and the „most", to assist them to develop sustainably and to combat their national problems related to deforestation and degradation. However, REDD is also for the „elite" as they will be able to invest for their emission overshoots, like with the CDM.

Different stakeholders of the „elite", the „most" and the „poor" participate in formulating REDD to include the scheme in the new/post-Kyoto protocol, to be decided upon in Copenhagen in December, 2009. Developing countries, the „most" and the „poor", even propose different REDD initiatives and they are consulted, included and supported by the different UN bodies to start implementing projects. Moreover, several developed countries such as Norway, Germany, and Japan, already invest millions of dollars in REDD initiatives to assist developing countries to combat forest loss. In addition, the Bali Action Plan (BAP)[1] acknowledges the role of local and indigenous communities in REDD activities, which indicates that traditional rights may well be recognized and indigenous communities („poor") will be included in the REDD decision making process. However, until recently, poor people, including indigenous, are not only often excluded from participating in forest decision making and are being denied their rights, but also have little defence from institutional disdain, criminality, abuse, misuse of tenure and corruption. Therefore, the Indigenous People's Caucus on Climate Change and varying NGOs united forces during COP14 in Poznan, Poland in December, 2009, to generate agreement among parties on the need to include and recognise the rights of indigenous peoples and local communities in REDD, including human rights instruments such as the UN Declaration of the Rights of Indigenous Peoples (UNDRIP), and procedural rights as Free Prior Informed Consent (FPIC). However, the final statement of the COP14 only recognizes „the need to promote full and effective participation of indigenous and local communities". As such, different arguments for equity are addressed through the participation of different stakeholders, yet, not enough for the „poor", according to indigenous peoples. Despite these developments, one needs to note that these developments change rapidly and might change for the better.

Procedural equity

Procedural equity is to a certain extent addressed with REDD. Perfect procedural equity may well be established with the instrument since during the negotiations, several stakeholders participate, and

[1] BAP refers to the plan the UNFCCC constructed to adopt a long term action plan on climate change conventions and a new/post-Kyoto protocol.

therefore, it is likely that the procedures will guarantee fair outcomes. However, as cited in the preceding section regarding the CDM, it became apparent that power and the amount of influence are generally unequally distributed within the UN climate change regime, favouring the „elite" stakeholders over the „poor". Questions about, financing mechanisms, definitions, distributive and procedural equity, as well as biodiversity stay unreciprocated and therefore it remains questionable whether the other elements of procedural equity, imperfect and pure procedural equity will be addressed.

Procedural equity could be increased by allowing countries flexibility in designing, developing, and applying carbon accounting methods for forest loss (Angelsen, 2008). Procedural equity could be addressed extensively when poor countries, and not only middle income countries, gain abilities to participate in the procedural aspects of REDD (i.e. monitoring, reporting and verifying: MRV), and if preferential treatment is given to the poorest countries (in setting reference levels). Civil society, in particular local and indigenous groups, need to participate and be heard more within the REDD mechanism. Some suggest doing this through broad and comprehensive reference to both groups, incorporating their rights, and including their access to the international review and accreditation systems that allow them to make appeals. Additionally, the participation could be extended by provision of adequate resources to establish effective accountability systems and help overcome financial barriers to participation and including representation of both groups on the governing body of a global REDD finance mechanism. Nationally, changes could also be made by including indigenous en local peoples into REDD projects not only by formulating guidelines to promote participation nationally and support key areas of national implementation, but also by including land tenure reform, strengthening civil society, increase involvement and participation of local governments and civil society in the MRV system (Angelsen, 2008; IPCC, 2007; Parker et al., 2009).

Distributive equity

Overall, distributive equity would be addressed with REDD if it considers the fair distribution of benefits between and within countries; the effect of REDD activities on local and indigenous communities; co-benefits with economic development and poverty reduction; as well as biodiversity, rights and forest governance. Nationally, distributive equity would be achieved if the distribution of costs and benefits across administrative levels and across land-use actors are considered. Furthermore, distributive equity would be addressed when REDD does not penalise early action, rewards bad policies, and penalises the lack of development of countries as this would increase the range of participating countries.

REDD should be in accordance with national development plans and strategies in order to address distributive equity within countries since the global REDD scheme will have implications for domestic distribution of costs and benefits. As such, the poor and their interests should be taken into account, but there exist many approaches on how to do this. A problem is that REDD could endanger forest-dependent poor since multiplicity of interests and polarization of wealth and power of different stakeholders in the forest sector can influence the outcome of REDD projects negatively and not in favour of the forest-dependent poor. Furthermore, the poorer the country, the smaller the likelihood of effective pre-financing of REDD activities to poorer communities. However, REDD could provide opportunities to indeed reduce poverty and address equity by delivering significant financial flows to rural areas of poor and indigenous communities. The international scheme sets the framework for REDD, but the co-benefits for poverty and environmental equity will depend largely on the ways in which incentive payments are translated into strategies for emission reductions at national levels. A successful REDD scheme that addresses emission reductions, poverty, and environmental equity should be integrated and aligned with other national development and economic strategies. National policies could range from national-level policies (such as decreasing dependence on forests, eliminate forest subsidies, and destructive logging); through improved industrial practises and initiatives that directly involve and affect the poor, such as alternative livelihood programmes and sustainable management education. *„A key constraint to increasing rural incomes through sustainable forestry has been the insecurity of property rights of many of the forest dependent poor"* (Angelsen, 2008, p. 112). Furthermore, local and national arrangements regarding allocation of benefits within countries are crucial for whether forest communities will benefit from REDD. Although there are hopes that REDD

could offer forest communities opportunities, there are also scenarios in which REDD could create risks which may result in that different institutions and organizations carve up forestlands and pursue forest protection approaches that marginalize instead of empower forest communities (Angelsen, 2008; IPCC, 2007; Parker et al., 2009).
A REDD regime which only allows national approaches could exclude most of the low-income countries participation and benefits for local and indigenous communities. This possible exclusion is based on the argument that those regions and peoples have inadequate infrastructure for MRV (monitoring, reporting, and verifying) and poor governance in relation to forest legislation, tenure and regulation. The international financial flows could then be entitled towards some middle-income countries which do have adequate MRV infrastructures and good governance, such as Brazil. However, sub-national approaches could be inadequate as well, as shown with the CDM in the sense that financial flows still go to middle-income countries with good procedural infrastructure. To address international procedural and distributive equity more, national capacity, institutions, governance, and accountability need to be strengthened in developing and poor countries to ensure their participation with REDD and to ensure a wider range of participating countries. Yet, a centralised national approach could limit procedural and distributive equity for rural communities of REDD, which could result in inequitable sharing of benefits and the nationalisation of carbon rights. With inadequate governments and large, additional financial flows, REDD may increase the risk of corruption and the projects could be allocated only to the state, and not the „poor". Additionally, poor and middle income countries" governments may have mixed track records in promoting inclusive decision-making processes and little incentives to ensure broad national and local participation with REDD. Moreover, if these processes do not address procedural equity, it is likely that distributive equity will not be addressed either. However, national approaches can align with national development strategies and bring long-term development goals into practice. Therefore, through REDD, domestic actions should also be taken by different stakeholders to adequately protect forests, have national support for transforming tenure plus forest activities, and ultimately, to increase distributive equity. Furthermore, Angelsen (2008) states that smaller scale sub-national and nested approaches may be more flexible than larger scale ones in responding to needs in specific contexts, such as REDD. Some carbon-credit forestry projects can strengthen local capacities, procedural equity, and community based resource management. However, private investors and some NGOs have a mixed track record when it comes to include community concerns into their projects and carbon markets are driven primarily by a global climate protection objective, not by local socio-economic ones. In this matter, both sub-national and national approaches have their benefits and challenges, but the drivers which shape the level of procedural and distributive equity will differ.

The inclusion of forest degradation, conservation and sustainable management of forests could extend the effect of REDD on GHG emission reductions as the three aspects highly influence forest loss, therefore, addressing intergenerational and international equity to some extent. This will increase if a wider range of countries can participate with REDD and thus, additionality and non-leakage are increasing and taken into account as well. Furthermore, as the mechanism aims at protecting nature and natural forests, it might address *all species* equity. Through aiming at eliminating bad practices of forest management and protecting natural forests, the mechanism might also address the peripheralization process within forest management: LULUs in forests might be eliminated and indigenous peoples might be protected from bad forest management. In addition, environmental racism can be addressed through REDD if the mechanism takes explicitly into account indigenous peoples" rights and if these peoples are able to participate with and benefit from REDD. Environmental racism is taken into account already to some extent as REDD considers the importance of developing countries problems related to forest loss and degradation which are mainly caused by developed regions (Angelsen, 2008; Angelsen et al., 2009; IPCC, 2007; Parker et al., 2009).

Climate equity

REDD is probably based on the *sovereignty approach* of climate equity as it proposes new binding reductions of GHG emissions for developing countries while developed countries support them financially. The amount of compensation may be decided upon by developed countries, but host countries will be paid for their efforts. As such, REDD might indeed aim at addressing the

comparability approach of the equality principle as GHG emission reductions should be addressed by both rich and poor countries.

REDD might also be based on the Polluter Pays Principle (PPP) and the Benefit Principle (BP) of the *responsibilities principle.* This, since REDD states that developed countries have an obligation, or „ecological debt" to compensate and pay developing countries for combating deforestation and degradation projects. Yet, developed countries may earn credits by investing in REDD and supporting developing countries to combat these problems. By this, REDD also takes into account the Common But Differentiated Responsibilities (CBDR) approach in the sense that developed and developing countries have different responsibilities with regards to combating deforestation and degradation. Furthermore, the responsibilities are based on economic growth and current emissions, thus also holding developing countries responsible for GHG emissions. Furthermore, REDD may address the BP by taking account of the projects and policies related to REDD, and the need to have economic, environmental, and social benefits for the developing countries implemented into REDD schemes. As such, developing countries would take a pro-active approach on climate change (Cotula and Mayers, 2009; Parker et al.,2009).

REDD might aim at addressing the *capacity principle* with all of its approaches since those with more capacity to address climate change, Annex I countries, are called upon to contribute more to finance REDD than developing countries. However, developing countries may also be called upon to adjust and improve their national policies regarding forest management. Furthermore, the economic situation and resource availability may be taken into account with REDD since Annex I countries have not only better access to technologies and institutional capacity, but also to financial and human capital which are necessary for climate change mitigation strategies. With a national approach to REDD, policies might improve in developing countries. As such, REDD may take into account the economic situation, resource availability and domestic constraints approach of the capacity principle. Domestic constraints are problems of many developing countries related to forests such as poverty, public revenue, corruption, national debt, balance of payment issues, and many more. Therefore, many argue that national strategies need to be combined with REDD to secure these issues and combat forest loss. However, it might also be that domestic constrains are not particularly addressed through REDD when taking a national approach since some argue that these national problems need to be taken care of first, if a developing country wants to participate within REDD. However, the mechanism might address the basic needs approach since it recognizes that providing basic needs for developing countries" citizens is a priority over addressing climate change mitigation. Yet, it also recognizes that basic needs can be provided through REDD since forest management and better practices may be beneficial for the national population. Even so, SD, which also addresses basic needs, poverty, economic development and more, is considered with REDD. Furthermore, the scheme aims at giving attention to how many opportunities countries may have to transform their economic and social situations, in an environmentally conscious way, before or during the implementation of the mechanism. Moreover, the developing countries have a good opportunity to cost-effectively and quickly abate global GHG emissions (Stern, 2007). REDD gives developing countries an advantage to quickly transform their economies, in contrast to developed countries which need to transform their whole societies into more energy efficient ones. The question of who should pay for the emissions is addressed since developed countries, the exporters, will pay and support developing countries to not export these products anymore or to export products of good forest management.

Finally, the mechanism might take into account several critiques of climate equity approaches since it admits that everyone is a polluter, including poor countries, although to differing extents; GHG emissions are hard to measure; climate change is a continuous problem; and mitigation efforts need to be addressed globally (Angelsen, 2008; Angelsen et al., 2009; Heyward, 2007).

4.4 Other mechanisms

Bolivia

Bolivia lobby"s for an Amazon without petroleum extraction and aims at protecting indigenous cultures, the environment, nature and social development. In addition, the country campaigns for moving forward with ecotourism, artisanal economy, and environmentally friendly sectors more.

Bolivia states that one needs to understand „Vivir Bien": the expression to *live well* among each other in a community with intercultural and asymmetric power relations. In addition, the republic suggests that humans need to save the planet from capitalism. Therefore, developed countries need to bind their consumption economies. Bolivia states that Annex I countries should reduce their GHG emissions by 40% in 2020 and by 90% in 2050. Furthermore, the ecological footprint, based on historical developments, should be recognized by the international community and the biggest footprints (developed countries) should create an integrated financial mechanism to support developing countries to implement their plans and programmes for mitigation and adaptation to climate change. Innovation, transfer of technology, and improvement of conservation should all be aims of such a financial mechanism. Moreover, the finances should be prioritized for countries which did not contribute much to GHG emissions, those who need to preserve nature, and/or are suffering from the impacts of climate change. In addition, Bolivia suggest that we need a global organization for environment and climate change in which other commercial and financial multilateral organisations promote a model of development which is amiable with nature and abates poverty. Such a model should include unconditional funding for sustainable development that does not waste natural resources and fossil fuels in production processes, trade and transport of products (Aramayo Caballero; Morales Ayama, 2008).

Saudi – Arabia and certain OPEC countries

Many OPEC countries admit that petroleum cannot remain being their main economic source for long. As such, several petroleum producing countries have concerns about potential adverse economic effects on climate change mitigation efforts. Therefore, they have stated that any final climate change accord needs to include a commitment to compensate them if GHG emissions abatement results in a drop in demand for petroleum. For example, Saudi Arabia stated that it needs assistance from other countries as it seeks to develop new industries and sources of jobs for its growing population. Even so, Saudi Arabia stated that many developing countries would not sign a treaty that rejects to compensate countries which are heavily dependent on fossil fuels. As such, the Kyoto Protocol indeed gives special attention to countries with fossil fuel based economies. However, this idea has been criticized due to inter alia, the issue that OPEC raises oil prices while asking for compensation (New York Times, 2000).

Indonesia

Indonesia has proposed to refrain from planting African palm trees, combat deforestation and reforest areas if developed countries compensate them. The issue is that palm oil, same as oil from corn, belongs to the first generation of biofuels, which consumes carbon stored in current plantations and generally replaces food products. First generation biofuels therefore are often accompanied with different environmental, social and economic impacts. The aim of the proposal of Indonesia is therefore to try and address these problems through an international fund, mainly through donations by developed countries (Larrea et al., 2009).

4.4.1 Equity related issues and challenges

Davy's arguments for equity

It can be stated that the Bolivian proposal aims at protecting the „poor" and the „most" since Bolivia is a „poor", developing country which aims at protecting the „poor" and the „most". The Saudi-Arabian proposal is quite different because there are many poor people in that area and, as a country, it can be perceived as „elite". Moreover, the proposal will be beneficial for them since other „elite" (Annex I countries) should financially support Saudi-Arabia to transform its economy. Indonesia is on the other hand comparable with Bolivia since it is a developing country which proposes to protect nature through financial contributions of developed countries.

Procedural equity

The proposals developed by the different countries all include some procedural equity aspects. The Bolivian and Indonesian proposals are comparable as they come from developing countries itself and thus, participation of the „poor" is present. Perfect procedural equity may be addressed through the two proposals as the procedures may guarantee fair outcomes for at least the „poor" and the „most". Furthermore, since the Bolivian proposal uses some methods and criteria which take into account different stakeholders from society, imperfect and pure procedural equity are addressed to an extent. In contrast, the Saudi-Arabian and OPEC countries" proposal is developed by the „elite" and is therefore quite different in terms of procedural equity. With this latter proposal, perfect procedural equity can be conceived as addressed only in favour of the „elite" and a fair outcome of the procedures will probably not be achieved as it does not include the participation and aims of the „most" and the „poor". For both the Indonesian and the Saudi-Arabian/OPEC proposals count that since there are neither methods nor criteria used to guarantee a fair outcome, little can be stated with regards to imperfect and pure procedural equity. Or, if both countries will eventually not use any methods or criteria which specifically aim at guaranteeing fair outcomes, both proposals may neither address imperfect nor pure procedural equity. The likelihood of the latter outcomes can be debated.

Distributive equity

In terms of distributive equity, the proposals differentiate as well. The Bolivian proposal may increase distributive equity since different stakeholders such as the „poor", future generations, and nature may well benefit from this proposal. Furthermore, the proposal explicitly states that the „poor" should be protected. Through the plan, sustainable development may be stimulated, GHG emissions may decrease on the long term, and nature may be protected and thus, the proposal may address *all species and intergenerational equity*. If the financial institutions and organisations indeed transfer, divide, and share their resources equally and globally, the Bolivian initiative might increase distributive equity. Moreover, if different sustainable development projects are implemented in developing countries and petroleum extraction is eliminated in Bolivia, peripheralization and environmental racism might decrease. On the other hand, since the Saudi-Arabian proposal may only be for the „elite", it may not increase distributive equity for the „most", let alone the „poor". In addition, it is not a direct aim of the Saudi-Arabians to protect nature and future generations from environmental threats such as climate change as the proposal aims at protecting their fossil fuel based economy. Peripheralization and environmental racism may still exists at least in Saudi-Arabia since fossil fuel industries are generally in marginalized areas and the „poor" nor the „most" benefit from the proposal. However, in the long term, if the economy is transformed to a sustainable one, without the use of fossil fuels, it may protect future generations, the „poor" and the „most" from catastrophic climate change and other related problems. The Indonesian proposal is from a developing country and it may address distributive equity for the „poor" and/or „most". The Indonesian proposal may also be beneficial for future generations and all species as it aims at protecting nature, forests and decreasing GHG emissions by combating forest loss and African palm tree plantations. In addition, peripheralization and environmental racism may decline if the deforestation and palm tree plantations decrease, which generally negatively affect marginalized areas in terms of economy, environment and social aspects. However, the proposal is not as strong in addressing distributive equity as the Bolivian proposal simply because it only aims at combating deforestation and palm tree plantation, and not at combating petroleum extraction, re-organising financial flows, and GHG reduction targets for developed countries. However, the Indonesian proposal is not as strong in relation to benefits of the „elite" and fossil fuel compensation as the Saudi-Arabian one.

Climate equity

The Bolivian proposal explicitly proposes new binding reductions of GHG emissions for developed countries, and therefore the proposal is probably based on the *sovereignty approach*. In contrast, the Saudi-Arabian proposal is different in another way as one can state that it is a developed country and a major polluter, and it therefore should be held responsible for climate change as well, in terms of the sovereignty approach. The Indonesian and Bolivian proposals may aim at addressing the

comparability approach of the equality principle as GHG emission reductions should be addressed not only by developed countries, but also by developing countries with financial support of Annex I countries. Yet, Bolivia is slightly different from this as the country already aims nationally to reduce its impact on the climate system, nature and indigenous peoples.

It can be stated that all three proposals are based on the Polluter Pays Principle (PPP) as developed countries are held responsible and need to support the countries financially. Particularly in the Bolivian case this is based on historical, current and future GHG emissions. The Saudi-Arabian/OPEC proposal may differ in terms of its arguments related to PPP since although they are a major GHG emitter, they do not state they will pay for it. Moreover, Saudi-Arabia holds other developed countries responsible for negative impacts on their economy if the import of fossil fuels will decrease due to climate change policies.

The Bolivian and Indonesian proposals may aim at addressing the *capacity principle,* with all its approaches since countries with the greatest capacity, Annex I countries, need to support the „less capable" countries in relation to climate change, peripheralization, deforestation and economic transition. In contrast, although Saudi-Arabia has many financial resources, it still holds Annex I countries responsible for the impacts of climate change mitigation policies.

4.5 Conclusion

This chapter outlined that the Kyoto Protocol has not achieved everything that it has aimed for. The most important goal that has not been achieved is the GHG reduction targets of the developed countries who rectified the protocol. In addition, with regards to environmental and climate equity, many aspects have not been addressed.

Although the CDM is an important instrument in assisting countries to develop their economies in an energy-efficient path, it is a problematic mechanism in relation to addressing procedural, distributive, environmental, and climate equity, together with environmental racism. However, CDM projects do create cooperation between developed and developing countries, which increases participation and maybe even procedural equity. Furthermore, some of the CDM projects do transfer technology from developed to developing countries, which can increase distributive equity. However, it can be questioned whether these benefits are indeed a result of the CDM, or due to other developments.

REDD has much potential with regards to GHG emission reductions through an efficient and cost-effective method. Yet, there are many challenges with monitoring, reporting, verifying, leakage, and additionality aspects. There are also challenges in regard to the protection of indigenous peoples, along with procedural and distributive equity.

The proposals of Bolivia, Indonesia and Saudi-Arabia are quite different not only in terms of objectives, but also in terms of equity issues. The Indonesian proposal goes somehow beyond REDD, as it includes not to plant palm trees at all, next to combating deforestation and protecting forests. The Saudi-Arabian proposal is pro-elite and has faced critiques from developing and developed countries. The Bolivian proposal may be the most prominent and ambitious proposal in terms of GHG reductions, institutional re-organisation, protection of forests and peoples and sustainable development. As such, it may have the most opportunity to increase not only procedural and distributive equity, but environmental and climate equity as well. Yet, since the proposal is not quite concrete, one cannot state with certainty that procedural and distributive equity can be addressed through the Bolivian proposal.

Based on these developments, one can question how the Yasuni-ITT Initiative functions and if it indeed addresses environmental and climate equity in a more concrete sense than the Bolivian proposal. However, prior to answering these questions, one should examine the national developments in Ecuador which can be perceived as motivations of the Yasuni-ITT Initiative.

5 Ecuador: now and in the past

5.1 Introduction

In the preceding chapter, several international motivations for the Yasuni-ITT Initiative were described. In this chapter, national and country-related developments and motivations for the initiative are outlined. This chapter considers political, economic, social and environmental developments. In addition, it explores the political milieu and power distributions within the country related to different stakeholders as to gain knowledge about the procedural (equity) background of Ecuador.

Ecuador is a middle income country and has witnessed many political, economic, social and environmental problems which are emblematic of many South-American countries. This chapter details these challenges. In the first section, a country profile is given with information about geography, demography, and social aspects. In addition, it describes the (economic) development and international relations of the country, its energy production and potential, as well as its natural abundance and values. Thereafter, in the third section, a concise history is given, beginning with the pre-Inca and Inca period, followed by the Spanish conquest and colonisation. In the following section (5.4), the recent developments are described in relation to political, economic, social and environmental issues. These recent developments are accompanied with crisis and improvement of the economy, as well as environmental conscience of the public and the government. The fifth section covers the political milieu of the country in relation to power distributions between the government, civil society (e.g. NGOs, indigenous groups) and the market. Since the petroleum industry and the proposed exploration of certain blocks in the Ecuadorian Amazon are motivations for the Yasuni-ITT Initiative, the sixth section describes the various problems related to the petroleum sector. Finally, the conclusion (5.7) of this chapter gives an overview of the important findings within the country and connects with the next chapter.

5.2 Country profile

5.2.1 Geography

Ecuador (i.e. „Equator") is a small country in the north-west of South America, south of Colombia, and north-west of Peru (see figure 5.1). Ecuador has four geographical parts in which demography, nature, and environment differ greatly: the coast, the Andes, the Amazon and the Galapagos Islands (960 km off the coast). Furthermore, the elevation of Ecuador varies from sea level to 6310 metres above sea level which, together with ocean currents, El Niño, La Niña, and the equator, influences the climate of the country greatly. For instance, due to the equator, Ecuador experiences hardly any variation in daylight hours and seasonal change. Yet, the main total rainfall is 1014 millimetres annually. Quito, the capital, situated on the equator and with an elevation of 2850 metres above sea level, is not only the second highest capital in Latin America, but was also declared in the 1970s by UNESCO as a World Heritage Site due to its best preserved and least altered historic centre in Latin America (FWCO, UK, 2009; Larrea et al., 2009; World Bank, 2009; UN, July 7, 2009).

5.2.2 Demography and social aspects

Ecuador is a socially diverse country, as shown in table 5.1. The population is varied in terms of original ethnicity, but is also unique due to the emigrants from especially Peru, Bolivia, and Colombia, the Middle East, Arab countries, Asia (mainly China and Japan), North America, and Europe. Furthermore, many Ecuadorians living in different European countries, the USA, Canada, Chile, Venezuela, Mexico and Japan transfer remittances to Ecuador, which is one of the biggest economic sources for the country. The distribution of the population differs greatly, as the majority of Ecuadorians reside in the Andes or along the coast, and the Amazon remains quite unpopulated with only 3% of the population living in the area, most of which are indigenous peoples. Additionally, while urban areas are increasing, the rural population declines. The population growth rate of Ecuador is 1.1% per annum from 2005 till 2010; however, women and men do not have a long life expectancy and the infant mortality rate is fairly high. In terms of gender, Ecuador is unequally divided as men

have a better opportunity than women to find a job and more men are in governmental positions than women.

Although indigenous peoples are relatively integrated into the Ecuadorian mainstream culture, some still practice their original cultures and traditions in remote areas of the Amazon. Moreover, there are still two non-contacted indigenous groups living in the Yasuni National Park. Furthermore, some indigenous groups managed not only to synchronize their beliefs with Catholicism, the main religion, but also most of the festivals and celebrations are based on religious beliefs of these two distinct backgrounds. Finally, Ecuador has had several important artists and Ecuador is well-known for the Panama hat and special masks from recycled paper (FWCO, UK, 2009; Larrea et al., 2009; World Bank, 2009; UN, July 7, 2009).

Figure 5.1 Ecuador and its geographical differences

Source: Sosyasuni, 2009.

Table 5.1 Country profile of the Republic of Ecuador

Area	283561 sq km (109,000 sq miles) (including the Galapagos Islands).
Population projected in 2007 and population density in 2007 (per square km)	13.34 million and 47.0
Capital City and largest urban agglomeration:	Quito (1.8 million) and Guayaquil (2.5 million).
Ethnicity	Mestizo, mixed descendants of Spanish colonists and indigenous groups, (55%); Amerinidans (24%); Afro-Ecuadorians, mainly based in Esmeraldas and Imbabura (5%); whites, mainly unmixed descendants of early Spanish and European immigrants (16%).
Indigenous groups (27 total)	Achuar; Awá; Cañari; Cayambi; Caranqui; Chachi; Chibuleo; Cofán; Epera; Huaorani; Huancavilca; Manta; Natabuela; Quechua; Amazonian Quechua; Otavalo; Panzaleo; Puruhá; Quitu; Salasaca; Saraguro; Secoya; Shuar; Siona; Tsachila; Waranka; Zaparo.
Language(s	Spanish (official); indigenous languages as Quichua, though only 2% speaks this.
Religion(s)	Roman Catholic (95%); Protestant (4%); small communities of Jewish, Eastern Orthodox Christians, followers of the Church of Jesus Christ

	and Latter-day Saints, Muslims, Buddhists and Baha"i
Currency	US Dollar since 2000. Used to be the Sucre: 1 USD=25000 Sucre.
Major political parties	Alianza País (Government Party/Correa); Partido Sociedad Patriótica (PSP); PRIAN; Movimiento Popular Democrático (MPD); Partido Social Cristiano (PSC).
Governmental system	The 2008 constitution provides for a presidential system of democracy with presidential elections held every 4 years and an executive and a legislature consisting of a unicameral National Assembly.
Membership of international groups/organisations	UN; WTO; G11; G77; Organisation of American States (OAS); Andean Community (CAN); Latin American Integration Association (ALADI); Rio Group; Inter-American Developmental Bank (IADB); OLADE; Human Rights Committee of the UN; and associate member of Mercosur.
Gini coefficient **HDI (2006)**	42 (medium) ▲ 0.807 (high) (72nd in world)
Ecological Footprint (global ha pp, 1999 and 2001)	1.54 and 1.80 (corresponds to rank 40 globally)

Sources: FWCO, UK, 2009; Globalis, 2009; World Bank, 2009; UN, July 7, 2009.

5.2.3 Development and relations

Ecuador, ranks in position 89 among 177 countries by its Human Development Index (HDI)[2] and is a medium-income country, based on the Gini coefficient[3] (see table 5.1). Nevertheless, not only social, ethnic, and regional disparities remain pervasive, but also 38,3% of the population lives below the poverty line (income below or around $1 a day) (see table 5.2). *„Within Latin America, it is clearly a less developed country, with a per capita income just above half the regional average"* (Larrea and Warnars, 2009).

As many South American countries, Ecuador"s export exists for 90% of raw materials and natural resources such as petroleum, bananas, fish, flowers, shrimps and timber. After the discovery of large petroleum reserves in the Amazon in 1972, Ecuador has become highly dependent on petroleum export revenues as it counts for 54% of the total exports in the last decades and petroleum revenues made up on average 6% of the government"s revenues between 2000 and 2007. At first, petroleum exports stimulated economic growth and social improvement; however, since 1982 economic growth remained elusive, unemployment remained high, inequality increased and social conditions barely improved. Moreover, up until 2005, 85% of the petroleum profits was conveyed to the (international) petroleum companies and their home countries. Ecuador realised this was unfair and decided to divide the profits in half. The current Ecuadorian president, Rafael Correa, decided later that 100% of the profits would be for the Ecuadorian government, although the petroleum companies still make large profits. Despite all this, petroleum is the main income of the country, but most of the income goes to the government or to pay external debts, which have increased even with the petroleum boom in the 1970s. Furthermore, the towns near the petroleum extraction regions remain reasonably poor as the oil-incomes leave the region. Finally, extracting petroleum has become more difficult and expensive since the quality has declined, the heaviness has increased and it often contains sulphur (Banco Central, 2009, CEPAL, 2008, Larrea et al., 2009).

The Ecuadorian economy started to stabilize after the adoption of the US dollar currency in 2000, but with little international presence and certainty of structural economic growth. Furthermore, due to the dependence upon primary products, Ecuador is not only vulnerable to natural disasters (e.g. plagues and diseases) and the prices of commodities (which decreased rapidly with the economic crisis), but it is also vulnerable since such sources cannot drive economic growth perpetually. The situation is even more uncertain as the country did not actually succeed in diversifying its economy, especially in contrast to Colombia or other Latin American countries. These processes are enforced by worldwide competition, as primary products are available in many other countries of the world and

[2] The Human Development Index, or HDI, is used to rank countries by level of human development, referring to whether a country is a developed, developing, or underdeveloped country. Higher indexes refer to more developed, lower to less developed. For example, most African countries have indexes of 0.4 or less, while the USA has an index of 0.9 or higher.

[3] The Gini coefficient is a measure of statistical dispersion, commonly used to measure inequality of income or wealth, and some use it in studies of inequalities of health science, ecology and chemistry. Higher Gini coefficients indicate to a more unequal distribution (1 refers to perfect inequality).

international companies extract and export much of Ecuador‟s natural resources. Furthermore, with the economic crisis, the remittances of Ecuadorian migrants are heavily affected due to the collapsed markets in Europe and the USA. Even so, experts predict that unemployment will increase significantly in Ecuador from 2009 onwards when exports fall and if the government is forced to reduce the high level of state participation in the economy. Due to the economic crisis, many Latin American countries are specializing in the primary sector again, which have large environmental implications (FCWO, UK, 2009; F. Caríon Mena, personal communication, June 1, 2009).

Since Ecuador is fairly dependent on the economy of the USA, the government seeks new trading partners, especially in Asia, the Middle East, South American countries, and the European Union. However, international trade and the image of the country are influenced negatively by different factors such as the unstable political periods previous to Correa. Moreover, Ecuador is not only affected by drug traffic, illegal and terrorist armed groups of neighbouring countries, but also by domestic corruption in different sectors and institutions, including the government. Strikingly, Ecuador is classified as one of the most corrupt countries in Latin America on the international transparency Corruption Perception Index (CPI) (see table 5.2); however, the public of Ecuador recognizes that the government is trying to solve this problem. The relationship between Ecuador and Colombia is tense and unstable due to many problems at the borders, for instance, drug traffic to and from Colombia and aerial spraying of coca in Colombia which influences agricultural sites in Ecuador. Finally, the country deals with many environmental conflicts related to mining, petroleum, dams, banana production, flowers, shrimps, and mangroves. As such, Ecuador has a middle ranked ecological footprint (see table 5.1) (A. Acosta, personal communication, June 6, 2009; World Bank, 2009; Larrea-Maldonado, 2006).

Table 5.2 Economic indicators of Ecuador (% of GDP, unless stated otherwise)

Year/ Indicator	2002	2003	2004	2005	2006	2007	2008
Real GDP growth	4.2	3.6	8.0	6.0	3.9	2.5	3.1
GDP (2008 forecast)							$48.5 billion
GDP, per capita per year (PPP, 2008)							$3,514 billion
Inflation rate in 2008							8.83
Change in CPI[4] (year on year)	9.3	6.1	1.9	3.1	2.9	3.3	9.0
Trade balance	-5.6	-1.7	-1.4	-0.5	1.5	1.0	2.7
Petroleum	6.2	5.5	8.5	9.6	10.6	10.5	14.3
Non-petroleum	-11.8	-7.1	-9.8	-10.1	-9.1	-9.5	-10.0
Current account	-4.7	-1.5	-1.7	0.8	3.6	3.6	4.9
Direct inward investment (FDI)	5.1	3.0	2.6	1.3	0.7	0.4	0.9
Non-petroleum	0.9	0.8	0.6	0.3	0.2	0.2	0.2
Remittances from emigrants	5.8	5.7	5.6	6.6	7.1	7.0	6.4
International reserves coverage (months of import)	2.0	2.2	2.2	2.7	2.1	3.2	3.6
Dollar-denominated public debt [1]	56.9	49.9	43.1	38.5	33.9	32.0	28.2
External	45.8	40.2	33.9	29.2	24.7	23.5	20.6
Ecuadorian Crude petroleum exports unit value (US$/Barrel)	21.8	25.7	30.1	41.0	49.6	59.9	58.0

Note: Data of 2002-2007; WB and IMF estimates for 2008. Aggregates are from the World Economic Outlook**.** Excludes contingent liabilities (estimated to be over 12 percent of 2007 GDP).
Source: World Bank, July 7, 2009.

[4] CPI: Corruption Perception Index

5.2.4 Energy production and potential

Ecuador produces energy mainly from petroleum (19%) and hydroelectric dams (70%). It also imports electricity from Peru and Colombia (11%). In the 1970s, Ecuador invested in large hydroelectric dams which currently count for the largest energy source of Ecuador. However, as the economic situation deteriorated, the country could not invest in energy projects and it needed to import energy from Peru and Colombia. During the past few years, the government has started to invest in renewable energy once again.

The country has a high potential for geothermal energy due to the high volcanic activity. Hydroelectric power can also be developed in the country due to the many rivers; however, dams create problems related to water supply for households and agriculture as well as the increase of waste in the non-flowing rivers. Moreover, most of the current dams need to be supported by other dams to operate properly and on full potential. These problems can be solved through the implementation of small, natural, and filter dams together with the decrease of upstream activities. Wind energy is interesting to implement in the Ecuadorian Andes, at the coast and on the Galapagos Islands. Additionally, the country has a high solar potential due to the equator which causes a stable climate, no seasonal change, and high solar activity. It might be possible to generate tidal energy in the country, but this technology needs to be developed further to be financially attractive and productive. In order to develop these new renewable energy projects, Ecuador needs foreign investment (Larrea et al., 2009).

5.2.5 Nature

Ecuador is one of the richest countries in the world in terms of biodiversity and globally threatened species. Therefore, it is one of the 18 megadiverse countries in the world. 39.2% of the country‟s area is forest and 19% (5 million hectares) of the country is protected, which could be extended to 38%. The Amazon rainforest is the largest, intact rainforest with the highest biodiversity in the world with 8 million people living in the basin, and although the Ecuadorian Amazon covers only 2% of the basin, it hosts the most diverse place of the Amazon due to climatic conditions. Yet, the Ecuadorian Andes have the highest biodiversity in the country, compared to other ecosystems. Many Ecuadorian rivers flow from the Andes, or even from the coast, to the Amazon, which increases the diversity of the region. Due to its mild, but diverse climate as well as the equator, the Andes and geological-volcanic activity, the continental part hosts many different natural environments as it is not too cold and too hot for plants and animals to survive. Ecuador hosts a considerable amount of species with approximately 16000 vascular plant species, of which almost 72% is native, and within that, 27.3% is endemic. In addition, there are 25000 plant species, 106 endemic reptile species, 138 endemic amphibian species and 6000 butterfly species in Ecuador. In the continental area, there are 1600 bird species, including 15% of the worlds‟ known bird species, and 38 endemic bird species reside on the Galapagos Islands. The Galapagos Islands are famous due to its distinct flora and fauna. Also in terms of marine life, Ecuador hosts an extraordinary amount of species, obviously visible around the Galapagos Islands. Finally, the ocean currents, El Niño (a heating effect) and La Niña (a cooling effect) play a key role, next to the equator, for the divisiveness of species of the Galapagos and the mainland. However, Ecuador also faces different environmental problems. For example, the recorded amount of threatened species living in Ecuador in 2008 counted 2208. Moreover, the Galapagos Islands were declared as a UNESCO World Heritage Site; however, due to several negative environmental impacts, it has been removed UNESCO from the list and is instead declared as a threatened area. Figure 5.2 shows the different natural areas in Ecuador (Bass et al., 2008).

Figure 5.2 Nature parks in Ecuador

Source: Sangay, 2009.

5.3 History; pre-Inca till independency

5.3.1 From Pre-inca to colonisation

Humans were present approximately from 11000 B.C. and 9300 B.C. in the Ecuadorian highlands and the Amazon. After 3500 B.C., different cultures emerged as humans started planting crops and cultivate species such as the lama. Thereafter, also during the pre-Inca and Inca periods (from 1460 till 1523), times were very rich in terms of cultural, political, agricultural evolution and the growth of commercial places such as Quito. The development of agricultural products such as potatoes, cacao, fish, yucca, tobacco, quinoa, corn, and beans, together with ceramic, gold, metal and other natural resources could have extended the population. However, the rapid developments, together with the extensive use of natural resources, soil erosion, deforestation, and the change of climate, influenced the growth of the population negatively.

The Spanish conquest and the colonial period lasted from 1534 till 1822. Indigenous peoples resisted forcefully during the conquest, in contrast to Peru and Bolivia, and as such, they obtained some local autonomy as well as land tenure in which they conserved some of their social institutions. Yet, the colonists dominated over them eventually. Moreover, with the Catholic Church and the Spaniards, the decline of indigenous‟ cultures and traditions increased. The Spaniards created a large economic region with varying sectors such as mining of silver and gold, as well as developed agriculture with the introduction of products such as apples, oranges and grapes. These rapid developments were accompanied with degradation, destruction of agricultural areas and biodiversity loss. Furthermore, the epoch came not only with unequal social, ethnical, economic and regional growth, but also with the introduction of contagious diseases (e.g. malaria), massive poverty, decrease of population (50% of indigenous died), plus the reduction and subsequent abundance of cultivated areas. Therefore, many people moved to lower parts of Ecuador and most of the cities did not expand, apart from Guayaquil, which remains the biggest city in Ecuador. Thereafter, the Spanish territory dealt with economic depression, the disarticulation of old-Peru, a tendency towards autarchy in every

region or a quest for direct articulations on the international markets, and the consolidation of the traditional hacienda system. The latter is still considered as the enslaved structure of Ecuador in which locals who resided and worked on agricultural sites owned by landlords, needed to deposit their total salary for the rent, whereas the benefits of the labour were for the landlords (Larrea-Maldonado, 2006, pp. 22 - 28).

5.3.2 Independency

Ecuador became a republic and gained independency in 1822. At first, the crisis of the colonisation period continued and the national infrastructure was minimal for the transportation of goods. The period from 1860 to 1980 started with economic growth due to the growth of the cacao and banana export; however, it was followed by another economic crisis because of diseases, which struck the cacao and banana industry; the decrease in international demand for primary products during WW II; and the great depression in 1929. Therefore, other products needed to be exported such as cacao and petroleum. Finally, economic growth influenced the development of the country not only in terms of growth of labour, population, migration, and the improvement of the agricultural infrastructure, but also in terms of integration into regional and international markets. Also during these periods Ecuador had a competitive advantage over other countries as labour costs were low. On the other hand, economic growth had a negative impact on certain social, natural and environmental aspects of the country. Unemployment, social inequity and disparity did not decrease, and the rural population remained in extreme poverty. Furthermore, deforestation, soil erosion, fragmentation, biodiversity loss and even the disappearance of forests were direct consequences of the economic growth. Many forests were overtaken by introduced species such as eucalyptus, which uses more water than original species, therefore impacting the availability of fresh water.

In 1967, Texaco, the North-American trans-national cooperation, started to extract petroleum in the Ecuadorian Amazon. In 1972, the country started to export crude petroleum. In contrast to expectations, the production of petroleum grew from 250.000 in 1972 to 400.000 barrels per day in 1988 and around 65% of it was exported (the exploitation will reach the total capacity in between 18 and 25 years, from 2009, depending on possible new reserves). The petroleum industry influenced the capacity of the state to participate in profits or to intervene directly in the production. In effect, the state owned approximately 80% of the petroleum activities at the beginning of 1990. Since petroleum is the first export product of Ecuador and is a major driver of many social, environmental, economic and cultural problems in Ecuador, petroleum extraction and its related consequences are described abundantly later in this chapter (Larrea-Maldonado; R. Muradian, personal communication, January 21, 2009).

5.4 Recent developments

5.4.1 Crisis

In 1982, the Ecuadorian economy was affected by the debt crisis, along with many other Latin-American countries. By 2003, the external debt was around $16,392 million, equivalent to 57% of the total GDP of Ecuador. The debt was, inter alia, caused by the fall of petroleum export prices in 1987 and 1998. Although, the price of petroleum increased again, the state benefited little due to the fall of petroleum production and natural disasters such as the El Niño and earthquakes, and also to the increased imports of combustibles. As a response to the crisis, the state started in 1981 political stabilisation and structural adjustments projects, next to promoting diversification of the exports as a new developing pathway. However, processes were conflictive and a lack of consistency existed. Moreover, although democracy was established in 1979 after many years of military dictatorship, the crisis increased political instability, corrupt and extreme presidents, who pushed for radical political and institutional changes but usually could not finish their terms. The country ended with disarray as the society could not adjust to rapid alterations, such as the deregulation of the financial system, elimination of subsidies, and other distortions. Furthermore, the war with Peru (from 1992 till 1998) aggravated the situation as it was accompanied with the use of many economic, political, social and environmental resources by Ecuadorian military. In short, the dire structural political environment,

extraction activities, the export of primary products and the crises intensified not only the pressure on the environment, economy, society, health and cultures, but also disturbed the development of sustainability, the intensification of regulation and control, international consolidation, and social equity. Even so, the crisis held the country in a downward spiral and as a consequence of its falling currency (the Sucre), the country adopted the American Dollar in 2000. The increase of the petroleum prices in 2000, the financial support of migrants, the reduction of international taxes due to the interest claims on international debt, and minor inflation, brought the country new opportunities and economic gain. However, problems remained with banks, politics, corruption and the economy. Although the export had fallen in 1999 – 2000 drastically and corruption in different sectors remained, the increased petroleum prices recovered the economy slowly, which reduced poverty levels in the country substantially. However, petroleum cannot continue to be the main national export, although reserves could serve until around 2020. In the end, the economic crisis had such a big impact that the estimated cost of it ranges from 22 to 25% of GDP, with a value of around 4000 million dollars (F. Carión Mena, personal communication, June 1, 2009; Larrea-Maldonado, 2006).

5.4.2 Improvements

In April 2009, Rafael Correa won the presidential elections for the second time, which is most likely a reaction to the previous decades and his actions during the first presidential terms, such as reformation, breaking with traditional powers (banks, military and elites), and rebuilding democratic institutions in the country. Correa, a left wing politician, may be more competent as a president than previous ones of Ecuador due to his high educational background, knowledge of politics, economy, society, the country and more. Correa believes that the government has an imperative role to play in the development of the country, and religion as well as conservative values are important to him. However, Correa does have autocratic tendencies, which can be dangerous as history shows that such presidents often have too much power and are supported by a congress with mostly members of its own party. Additionally, the presidents‟ party and institutions in Ecuador are young in political terms, which can be a difficult factor for changing circumstances positively within the country.

Although Ecuador has always perceived itself as a mining/petroleum country, the country currently recognizes that this economic sector has neither been beneficial for the economy, since the external debt only increased and no additional investments in the country are made. In addition, the sectors have neither been beneficial for the environment, society, cultures, health, and equity issues (see section). Therefore, the Ecuadorian society is gaining conscience about the importance of nature, environment, resources, cultures and equity issues. An important illustration of this process is the incorporation of new constitutional sections in September 2008, including *rights for nature*, *El Buen Vivir* (Good Life), and the recognition of *plural society* in order to move to complete democracy. Although other countries as Brazil and Colombia incorporated in their constitution the human right to have access to a clean and healthy environment, Ecuador is the first country which incorporates rights for nature and environmental costs into its constitution. The new Ecuadorian constitution states that: *„Natural communities and ecosystems possess the unalienable right to exist, flourish and evolve within Ecuador. Those rights shall be self-executing, and it shall be the duty and right of all Ecuadorian governments, communities, and individuals to enforce those rights"* (The Guardian, July 8, 2009). Briefly, the government incorporated the following aspects in relation to nature and humans in the constitution:

- human rights of individuals and collectives need to be in harmony with other natural community rights of earth,
- living beings have rights to follow their vital processes,
- the diversity of expressed life of nature is a value on its own and,
- ecosystems have their own values which are independent from human utility.

Furthermore, the constitution states that nature needs to be respected and has the right to have a non-utility relation with humans. Besides, „El Buen Vivir" (Sumak Kawsai in Quechua) refers to *living in harmony* with humans and nature. Therefore, the constitution not only recognizes the importance of

living collectively with all species and generations, but also that humans need to be humane with nature. Moreover, one has the right to go to court when one believes that an institution, company or individual violates the new constitution.

The current national government believes that (economic) development, social and equity issues need to be considered and therefore the State has developed a new national development plan in which small-scale sustainable development projects are implemented, such as SocioBosque, energy saving light bulbs, hybrid cars and hybrid energy projects. Although in documents they are good ideas, it became apparent through research interviews that in practice, the projects function inadequately due to incapacity and lack of financial resources. In addition, „*During the OPEC meeting in Riyadh on 18 November 2007, president Rafael Correa of Ecuador [...] proposed a new eco-tax on petroleum exports by OPEC countries with the explicit aim of lowering a little the demand for petroleum in order to diminish carbon dioxide emissions"* (Martinez-Alier and Temper, 2007). The tax should go for poverty-reduction, education, including energy-poverty reduction, and for alternative energies, i.e. wind, solar, and geothermal. Yet, despite these positive developments there are still mechanisms with two opposite directions: protecting the environment and exploiting natural resources (A. Acosta, personal communication, June 19, 2009; Acosta and Martinez, 2009a, b, c; F. Carión Mena, personal communication, June 1, 2009; Larrea – Maldonado, 2006).

5.5 Political milieu

Examining power relations between governments, markets and civil society is not easy, as the relations are often ambiguous and interrelated. Despite these difficulties, this section considers the difficult relationships and power distributions between the government, market and civil society of Ecuador.

Government

The Ecuadorian national government has generally had more power than the market and civil society. Furthermore, Ecuador is a politically divided country as the coast appears to be dominated by liberal parties, right-wing parties and rich families, while the mountains seems to be dominated by more conservative, left wing or mixed parties. These contrasts caused many conflicts between the regions; however, since Correa, power relations have changed and it seems that conflicts are solved. This might be due to the fact that he is well educated, from the coast and sympathetic to the Andean people. Additionally, Correa does not have a genuine opposition. Previously, the (neo-liberal) government generally had much power and was quite authoritarian, whereas now, it is more cooperative and the powers are more balanced than ever. Nonetheless, it is quite a centralised state which tries to control institutions, resources and other aspects.

In general, the state has always been in favour of economic growth over social and environmental concerns; however, due to the many problems with the petroleum industry and the petite effect on economic growth, the government rethinks its position in relation to natural resources. However, the state has given more power to itself with the mining and petroleum industry through legislation and state companies such as Petroecuador or Mining Ecuador. Furthermore, the current government‟s response to the crisis is that the government suspends payments on foreign/external debt in order to continue to spend on social affairs. The government has had mixed views and sent mixed messages to the market and the civil society: while it announced a moratorium on some of the debts and supports other parts of the market, it introduced import restrictions and higher taxes on imported products to reduce unequal trade balance and to stimulate the local economy. Correa has stated that the external debt of the country could be considered as illegitimate or illegal. As a result, the country has been restricted from the access to international credits. Nonetheless, the national government succeeded in buying bonds and reduced the total foreign debt by $2 billion (Larrea-Maldonado, 2006).

Civil society

The political instability of Ecuador in the past decades negatively influenced economy, environment and society; nevertheless, it positively influenced social movements to strengthen their positions vis-à-vis the state and the market. In contrast to other South American countries, the Ecuadorian civil society and NGOs were quite empowered, the indigenous movements in particular, which increased good initiatives, democracy and protests. Even women could vote from the 1990s, which was remarkably early compared to other South American countries. However, this was motivated by the fact that right wing parties wanted more votes, which they mainly obtained from women. After the 1990s, many civil society leaders became politicians. Thereby, civil society thought it would have more influence. However, those politicians have been bound and restricted by higher powers and their ideologies needed to be adjusted. In addition, not only the power and amount of NGOs decreased, but also many NGOs became fragmented due to different ideologies and ideas. With Correa, the indigenous groups‟ power weakens as well as they are divided into two groups: one who supports Correa, and the other believes that the government takes over their territories. This whole process of weakening of power and influence might be related to the fact that the current government is more concerned with society, equity, education, health and the environment.

Yet, conflicts still exist between the civil society and the government, for instance, around mining. Civil society believes that mining is not a source for economic growth since it depends on finite resources and negatively affects cultures, people and the environment. The state, on the other hand, is in favour of using mining for economic growth. Indigenous people have different opinions about mining: some are against and some not. The latter is not against it as long as they benefit through obtaining money, drugs, alcohol and labour. The labour movement stood up against the state and the companies stating that they „stole their money‟ since employment and economic growth was promised by the petroleum market and the state; however, none of this happened and corruption worsened the situation for regular employers (Larrea-Maldonado, 2006; R. Muradian, personal communication, January 21, 2009).

Market

In terms of the market, banks usually had quite an influence on the political agenda; however, this has changed with Correa and the new government. The petroleum and mining market supplanted more or less a state‟s role. Furthermore, the state and the market are intertwined within these sectors since the state not only owns natural resource reserves, but it there are also state companies such as Petroecuador and Mining Ecuador, which both have reasonable power on the national market. Many critiques believe that the state left the civil society and the poor alone by not negotiating with the market and acting on the situation regarding the market‟s power. Furthermore, many reckon that while economic growth and labour was promised by the companies, only the more fortunate benefit from it. Moreover, the petroleum exploration has affected the country and the Amazon in quite negative ways (F. Caríon Mena, personal communication, June 1, 2009; Larrea-Maldonado, 2006; Martinez-Alier and Temper, 2006;).

5.6 Petroleum industry and its impacts

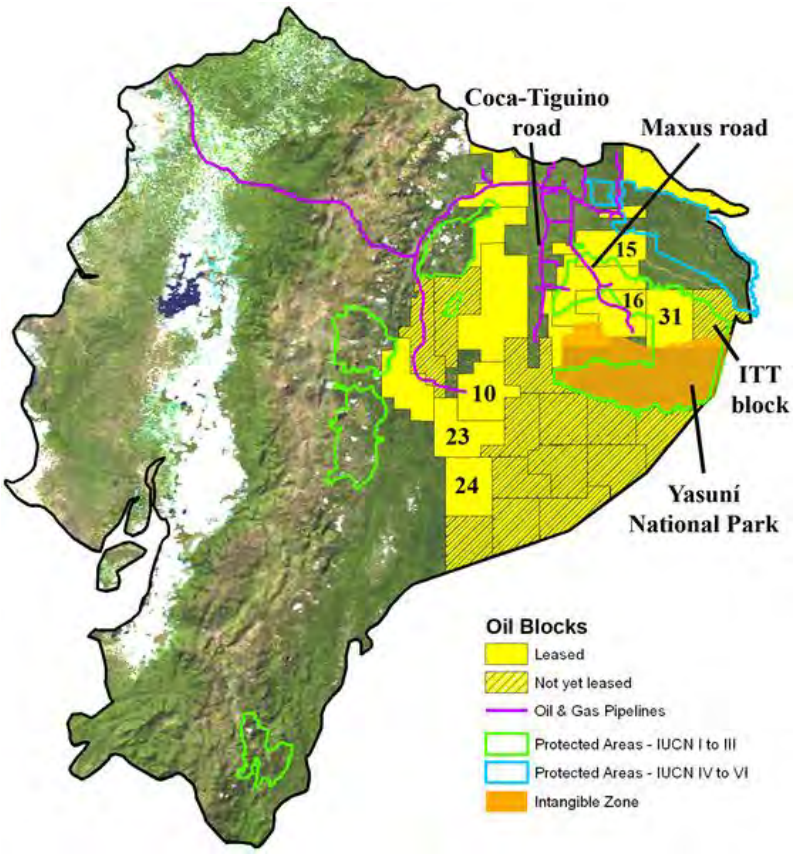
This section comprises an outline of the developments related to the most important economic sector of Ecuador, the petroleum industry, followed by the economic, environmental, social and cultural impacts of the industry on the Amazonian region and Ecuador in general.

5.6.1 Petroleum industry

There are around 180 petroleum and gas blocks covering 688.000 km2 of the total western Amazon, the most species rich-part of the basin. After the start of petroleum extraction in Ecuador in the 1970s, *„The Ecuadorian government has zoned ~65% of the Amazon for petroleum activities (~52,300 km2)* […]‟ (Finer et al., 2008, p. 4). Furthermore, since the Ecuadorian state reckons that the country is very dependent on foreign capital from the petroleum industry, many blocks in Ecuador not only cover protected, remote and exceptionally high biodiverse areas, but also indigenous territories.

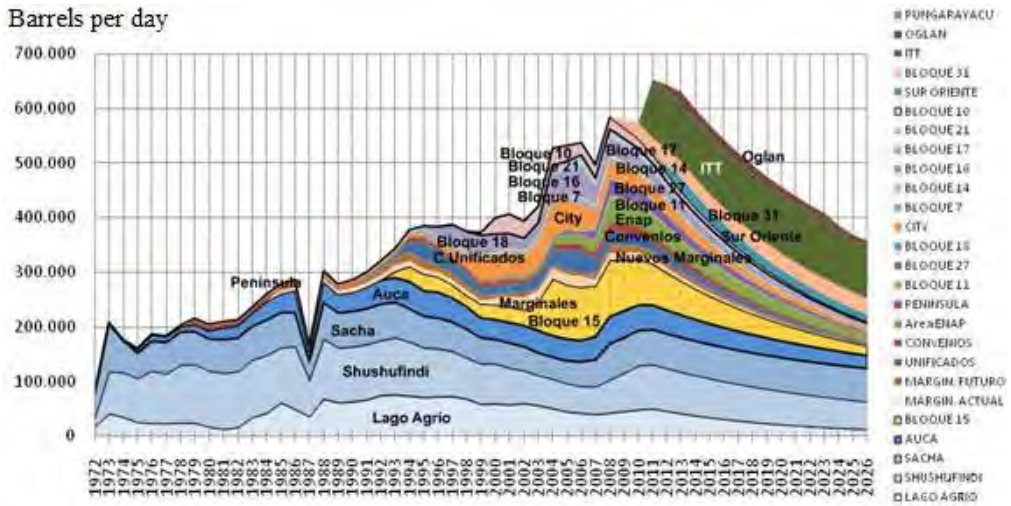
Indigenous groups have certain international rights, for example, those of the declaration of the United Nations General Assembly of September 13, 2007 which describes the standards of the protection rights and world visions of indigenous peoples. Indigenous peoples also have certain Ecuadorian rights with which they have the right to reject a project planned on their territory after being consulted, but this is hardly ever used. Furthermore, prior to exploration activities, project-specific Environmental Impact Studies need to be conducted. Unfortunately, petroleum companies contract firms to conduct these studies, which threatens the independence of the analysis. Indeed, there are not even comprehensive analyses of long-term, cumulative and synergistic impacts of extraction projects across a wider region of the Amazon. In 1990, the government implemented the Hydrocarbon Law to specify environmental regulations and in 1993 the state gave 4 million ha to indigenous peoples. Despite these developments petroleum extraction could still grow in the region and the government still contained the rights over minerals. Several treaties were signed and concessions were made between indigenous groups and petroleum companies. In January 2007, an untouchable zone of 7.580 km2 in Yasuni National Park was declared by the government to be off-limits for petroleum, -gas- and logging activities and it is now the official territory of two non-contacted indigenous groups. The new constitution states that no new petroleum blocks can be opened for extraction activities, only when the president and the government decide it is necessary to allow them. Figure 5.3 illustrate the different lease and not yet leased blocks. Furthermore, figure 5.4, demonstrates that the petroleum field productions in Ecuador consist of a considerable, but minor amount per day (Amazon Watch, 2007&2008; D. Romo, personal communication, June 2, 2009; Larrea-Maldonado, 2006; TED, 2008).

Figure 5.3 Oil blocks, roads and protected areas in Ecuador



Source: Sosyasuni, 2009.

Figure 5.4 Oil Field production in Ecuador per petroleum area



Source: Ministry of Energy and Mines, 2007.

5.6.2 Impacts

Petroleum extraction itself is not accompanied with numerous direct negative environmental impacts compared to other industries. Yet, the petroleum activities in the western Amazon are more obvious and have caused (indirectly) major environmental and social problems, which is likely to intensify without improved policies. Table 4.3 illustrates the indirect environmental, economic, social, political, and cultural negative impacts of the petroleum industry. Next to these, there are other negative developments in the Amazonian region driven by the sector, which are described below in more detail (San Sebastián and Córdoba, 1999).

Table 5.3 Effects of the petroleum industry in the Amazon

Environmental damage	Pollution, deforestation, alteration of ecological relations in ecosystems.
Economic impacts	Loss of productivity of self-sustenance economies. High costs of security, maintenance, mediation and compensation.
Social impacts	General deterioration in the zone. Alcoholism, violence, prostitution, disease. Destruction of the social fabric.
Political impacts	Increase in conflicts in the region, state abandonment of the zones, cross-border violence.
Cultural impacts	Impacts on the lives of local peoples, cultural extinction.

Source: San Sebastián and Córdoba, 1999.

Economic impacts

Ecuador is not renowned in relation to petroleum, such as Venezuela, since the country lacks specialists and the infrastructure to extract the resource. Therefore, international companies and experts are required to extract the resource. At least 35 multinational companies related to the petroleum industry are active in the Ecuadorian Amazon. However, most of the employers in the field are from Ecuador, usually people with a low level of education. Most of the international companies operate with concern for their employers and the impact of the environment on their employers, not with the concern for nature and local peoples. Next to that, the companies are more concerned about

the fine they may receive due to bad environmental practices, such as petroleum spills, than the environmental consequences. The costs related to the industry increase not only due to remediation and compensation activities, but also since local peoples often threaten the companies, which increase the high costs of security in the region. These developments had not uplifted the region in economic terms (San Sebastián and Córdoba, 1999)

Environmental impacts

Petroleum spills are a major environmental concern and they occur often in the Amazon. However, most of them stay unreported and their media coverage is low. The main environmental problems are most probably engendered from less-well funded the state company, Petroecuador, and its inability to practice petroleum extraction safely. Petroecuador has a world record of petroleum spills of around 400 a year (100,000 million litres of petroleum in total), including small and large petroleum spills, which is more than one per day. International companies, such as Repsol YPF from Spain (also active in Yasuni), utilize machines which check the petroleum pipes with cracks and other deficiencies. Markedly, many petroleum spills may be created on purpose by locals and indigenous, to receive money from petroleum companies. Even bioremediation specialists break petroleum may disrupt pipelines on purpose in order to work for their high salary, according to rumours. Additionally, the petroleum industry recognizes that with every vertical well to be drilled to obtain the petroleum, 500 cubic metres of garbage and between 2500 - 3000 cubic metres of liquid garbage is produced. The implemented technology are generally accompanied with toxi chemicals, which may be either directly dumped into rivers and streams, or deposited into the soil. The contaminated waters not only negatively affects the aquatic species living in the Amazon, but also contaminates agricultural sites, threatens the survival of plant and non-aquatic animal species. Moreover, *„The substances contained in petroleum industry waste are often bioaccumulative and directly linked to numerous diseases, since they include carcinogenic, teratogenic and mutagenic substances,(*SCYNP, 2004). However, it is possible that in the Amazon the recovery rate of the petroleum spills is faster than in other areas due to the active bacteria in the basin, which decompose the toxics.

High amounts of CO_2, chemical pollutants, particulate matter and other chemicals are emitted into the air through the burning of the fossil fuels directly at the sights, by transporting the fuels to other places, and through the use of the fuels by industries, households, cars and other sectors. This effects negatively the air, the (local) environment, and boosts the global climate change effect (Bass et al., 2008; TED, 2008).

With the petroleum companies, large scale transportation projects are implemented in the Amazon, which are the main drivers of deforestation, degradation, fragmentation of habitat and species, biodiversity loss, increase in agricultural practices, illegal (over)logging and hunting, drug traffic, and the access for indigenous peoples to the (illegal) markets. However, these problems not only derive from the petroleum companies, but also from indigenous peoples and locals as they adopted „gringo" (white) practices such as alcohol use, hunting, and (over) logging. The deforestation rate in Ecuador is one of the highest in South America with approximately 198,000 hectares per year of forest being lost. The difficulty with deforestation is that climate, water and forests are closely related to each other and as such, they influence each other profoundly (positively or negatively). Even so, the Amazon recycles 70% of its water, and when the forest is cut, the (re) cycle may discontinue, resulting in less rain. Furthermore, agricultural practices are increasing in the area, but since the Amazon is unsuitable for arable crops, the practices erode the soil which in turn increases deforestation and degradation (Finding Species, 2008; Larrea-Maldonado, 2006; San Sebastián and Córdoba, 1999).

Due to climate change, temperatures in the Andean countries may rise to almost 2ºC in 12 years, which can add up to 4ºC by 2050. Therefore, Ecuador will face significant negative impacts not only in hydrological cycles, which will affect the availability of energy, but also in the aridity of the soil, rising sea levels, agricultural productivity, ecosystem integrity, and water availability. Additionally, El Niño and La Niña will intensify with climate change, which will affect greatly the Ecuadorian coastal zones, agricultural practices, society, economy, and other aspects. Ocean currents (quality, quantity and temperature) will also change, which can have positive effects on some areas, but mostly

devastating effects on the Ecuadorian coastal zone. Global warming and deforestation could convert 30 to 60 % of the Amazon into savannah or grasslands. While the wet, western Amazon is not expected to disappear under any climate scenario as it is controlled by regional climate factors such as the Andes, the rest of the Amazon (especially the central region) may experience „novel" climatic conditions. This will have a profound effect not only on the earth"s whole climate as less forest can take up carbon from the air, but also on the biological diversity and biodiversity loss (Bass et al; Larrea et al., 2009; Min. del Ambiente et al., 2001; Stern, 2007; World Bank, 2009).

Social, cultural and political impacts

The development in the Amazonian region is accompanied with massive social pressures on the local and indigenous peoples, as shown in table 4.3 under *social impacts*. Although, social inequity, generally in the rural areas, did not positively change with the growth of the petroleum sector, the social/political situation added significant positive change towards education, health and investment in basic infrastructure. However, along with the petroleum companies, missionaries came to civilize the „savages" (the indigenous/locals) so that they would stop demonstrating and fighting against the companies. The new colonists introduced a „gift culture" to accomplish their goals, petroleum companies „buy" their way through the forests with presents such as drugs, alcohol and new buildings. Moreover, the indigenous peoples believe they are not capable of fighting against such powerful corporations, especially when receiving gifts from them. For tourists and other visitors, the „gift culture" is problematic since the indigenous peoples also demand gifts from them. On the other hand, tourism in the region is another threat to the culture and lifestyle of local people, as the sector often impacts the regional environment and has little respect for local traditions.

The state has abandoned the Amazonian region, as there is a lack of capacity and financial resources, which deteriorates the political instability of the region (Finer et al., 2008; Larrea et al., 2009; San Sebastián and Córdoba, 1999).

5.7 Conclusion

This chapter outlined different aspects which illustrate Ecuador as a developing country. As such, it may be apparent that, internationally, Ecuador has not played an important role in terms of trade, policies, power and more, also not within UN negotiations in relation to biodiversity and climate change. In addition, throughout time, Ecuador has been a conflicted country in terms of political, economic, social and environmental aspects. The latter especially, has been a problem in Ecuador for many years. For instance, developed countries and their corporations extracted many natural resources such as petroleum for import and own use, causing peripheralization in Ecuador, and an „ecological debt" of developing countries towards Ecuador. International inequity increased due to these aspects, but also since the economic gain of the natural resources has been relatively limited and the international external debt of the country even increased. Furthermore, national inequity has augmented as poor and marginalized communities suffer more from these processes of peripheralization and bad environmental practices than others. On top of these internal problems, lies the issue that the country may well be severely affected by climate change. This, since El Niño and La Niña may increase in force; glaciers are melting in the Andes, which affect the water supply not only for Ecuador, but also for surrounded countries; the coastal area may need to cope with sea level rise; and certain areas of the country will face severe drought. However, the Ecuadorian Amazon may be safe from negative climate change effects due to its wet and humid climate.

Although Ecuador has considered itself a petroleum country for many decades, this is changing with the new constitution and different policies regarding not only protecting the environment, nature, and peoples, but also increasing sustainable development and (deliberative) democracy. However, the country has neither sufficient capacities nor financial resources to transform to a sustainable and just society. Hence, the country calls for foreign support in order to go beyond a petroleum economy and to invest in sustainable development through the Yasuni-ITT Initiative.

6 The Yasuni-ITT Initiative

6.1 Introduction

The two previous chapters depicted the global and domestic motivations as well as constraints of the Yasuni-ITT Initiative. Yet, the questions remain: what is the initiative, who are the stakeholders, and can it really address procedural and distributive equity, as well as national plus international environmental and climate equity? As such, the second and third sections of this chapter describe the park‟s status, values and threats related to biodiversity, indigenous peoples and petroleum. Section four gives a detailed description of the Yasuni-ITT Initiative with its components, the allocation of the fund, the benefits, replicability, and its critiques. Furthermore, section 6.5 describes stakeholders‟ views and interests, together with the amount of their participation to accurately evaluate the procedural aspects of the initiative.

Through these descriptions and analysis, the question might be answered whether the initiative addresses the theoretic criteria through an extensive evaluation in section 6.6. Finally, a conclusion is given which answers the main questions related of this research.

6.2 Values of Yasuni

6.2.1 Status

„[…] *Yasuni National Park protects a region of extraordinary value in terms of its biodiversity, cultural heritage, and largely intact wilderness"* (SCYNP, 2004, p. 3). Yasuni National Park is the largest nature park in Ecuador, situated in the western Amazon and in the eastern part of Ecuador (see figure 4.2). In 1979, the Yasuni National park was officially created which counts a hectares (ha) of rainforest and is protected by the Ecuadorian government. In 1989, the UN declared the region of 928,000 hectares as a „UNESCO World Man and Biosphere Reserve". The UNESCO area contains 0,16% of South America and less than one half percent of the Amazon basin. A UNESCO reserve is not intended to be protected entirely and it needs to include sustainable management practices. Yet, the core of the park should be fully protected: it cannot be affected or altered in any way by human intervention. This core has a high biological value and the highest protection value in the country. In order to find this core in Yasuni, more research needs to be conducted. There is a buffer zone in which one can develop some activities such as tourism, research, and maybe some extraction by locals, according to tradition and local utilization. Logging is not allowed in this buffer zone; however, one can extract by fielding or replant products. Around the buffer zone, there is a transition zone which needs to include people, at least in terms of small towns, and those people need to practice sustainable development management and conservation projects. Some state that Yasuni is a „lonely park" since it is currently the only strict protected area in terms of IUCN levels I-IV which means that it aims at protecting indigenous territories and the biodiversity of the Napo Moist Forest, the Upper Amazon Piedmont freshwater eco region (containing numerous main rivers of the Amazon). When describing and discussing Yasuni and the Yasuni-ITT initiative henceforth, the UNESCO reserve is used as a reference (Bass et al., 2008; D. Romo, personal communication, June 2, 2009; SCYNP, 2004).

6.2.2 Biodiversity

The Yasuni reserve is one of the most biodiverse places on earth. Scientists still discover almost every month new species within the park, even though research has only been conducted in and around the Tiputini station (situated close to the park and accounting 650 hectares). The highest numbers of diversity in the world can be found in Yasuni, while one fourth of the species of Ecuador are in Yasuni. Tables 6.1; 6.2; 6.3; and 6.4 illustrate that the area contains world records of tree, amphibian, bird, reptile, and bat species and reaches diversity maxima within the Amazon. The region has a high level of endemic species. For example, *„Yasuni harbours roughly a third of the Amazon Basin's amphibian and reptile species, despite covering less than 0.15% of its total area"* (Bass et al., 2008, p. 3). Furthermore, „*Yasuni is also an important protected area for a considerable number of threatened species and regional endemics"* (Bass et al., 2008, p. 1) (see table 6.3). Yasuni also holds one fourth of

the fresh water in the Amazon due to melted water of the Andes which runs to the Napo-River (part of the Amazon River). In addition, the park contains river basins and freshwater eco-regions with more fish (562 documented) even than the Bolivian Amazon (the hotspot of fish biodiversity in the world). In general, high natural diversity is valuable for humans since (bio)diversity includes also genetic diversity which can be used for drugs, medicine, (scientific) information and more to protect human beings. Losing this information can have severe effects on humans and our existence (Bass et al.; SCYNP, 2004).

The rich biodiversity is due to the stable climate, proximity of the equator, high rainfall, and warm, stable temperatures year round. Besides, 70% of the rain that flows to the Amazon is caused by evapo-transportation: the recycling of water as roots of fauna absorb water, which they allow to evaporate in the air through their leaves, which causes clouds and rain in the area. Furthermore, the location of Yasuni is unique as it lies between the intersection of the Andes, in the Amazon and near the Equator. The elevation differences within the park are small, which increases the availability for species to migrate and thrive easily. Strategy differentiation among species might be major factor for high tree diversity in the park. Moreover, the year-round availability of fruit and flowers can be a cause for the presence of birds and mammals. The habitat heterogeneity/geodiversity and the diversity of young and fluvial soil types, which creates different ecosystems from drought to flooding – prone land, pools and inner lakes.

Other factors also play a role in the diversity of the region: mountains, wind, and according to some scientists, the last ice age (the Pleistocene era). During the Pleistocene (from 1.8 million to 10,000 years ago), an era in which glaciers drastically cooled the earth‟s climate, a great part of the rainforest turned into savannah, while other parts held more moisture and remained a rainforest henceforth. The latter parts became refugees for species migrating from dryer parts to more humid and fertile areas. Yasuni is an example of the latter which could have led to speciation and/or differentiated evolution of species in Yasuni. After the ice age, species started to spread out again, but Yasuni still hosts the most species in the Amazon. Many scientists disagree with this „ice-age‟ explanation as there are no comparable cases of such developments (Bass et al., 2008; Horn, 2006; LiveYasuni, 2008; SCYNP, 2004; Sosyasuni, 2008).

Table 6.1. Species richness, threatened species, and regional endemics of Yasuni

	Species Richness	Threatened Species	Regional Endemics
Amphibians	150	1	20
Reptiles	121	2	--
Birds	593	2	19
Mammals	187-217	8	4
Fish	382–499	0	--
Plants	~4,000	54	~200

Threatened species are those listed as Critically Endangered, Endangered, or Vulnerable in the 2009 IUCN Red List of Threatened Species. Dashes indicate unkown.
Source: Bass et al.,p. 24.

Table 6.2. Percentage of species in Yasuni compared to the Amazon

	Yasuní	Amazonia	Amazonian Species in Yasuní (%)
	9,820 km^2	6,683,926 km^2	0.15%
Amphibians	150	427	34.6%
Reptiles	121	371	32.6%
Birds	593	1,300	45.5%
Mammals	187-217	425	44-51%
Fish	382[c]–499	3,200	12%–16%
Plants	~4,000	40,000	10%

Source: Bass et al.,p. 26.

Table 6.3. Threatened and Near Threatened species totals for Yasuni

IUCN Category	Amphibians	Reptiles	Birds	Mammals	Plants	**Total**
Critically Endangered (CR)	--	--	--	--	1	**1**
Endangered (EN)	--	--	--	2	7	**9**
Vulnerable (VU)	1	2	2	6	46	**57**
Near Threatened (NT)	1	--	5	9	43	**58**
Total	**2**	**2**	**7**	**17**	**97**	**125**

Threatened species are those listed as Critically Endangered, Endangered, or Vulnerable in the 2009 IUCN Red List of Threatened Species.
Source: Bass et al.,p. 28.

6.2.3 Indigenous peoples

Fifty percent of the surface of Yasuni belongs to indigenous groups living in the area. The area not only overlaps the territories not only of the Waorani and Quechua, but also of two non-contacted indigenous groups; the Tagaeri and the Taromenane, both belonging to the Waorani ethnicity and who choose to live in voluntary isolation, globally an uncommon situation.
Traditionally, the Quechua resided in the Ecuadorian Andes, but they flew to the Amazon during the Spanish conquest. The Quechua have quite a different culture compared to the Waorani as the latter were nomadic and resided in the Ecuadorian and Peruvian Amazon. Furthermore, the Waorani are famous nomadic, hunter-gatherers and warriors, which formed alliances based on kinship and lived deep in the Amazon. They often conflicted with other ethnic groups and even between themselves. As such, the Waorani have always been isolated, but are marked with forced contact to the outside world.

Due to these alterations, some indigenous decided to live in voluntary isolation: the Tagaeri and the Taromenane, who inhabited the medium and lower zone of Yasuni, south of the Waorani and the Yasuni National Park. This part is declared as the intangible/untouchable zone: an official, protected territory for the two indigenous groups. Tagaeri is a general name for the clan of Tagae, a Waorani warrior who chooses to live in isolation. Taromenane includes one or various groups closely related in terms of language and culture. Many Waorani describe the Taromenane as almost mythological giants, being similar to them, but different. The Taromenane remain hidden in the Amazon, even cook at night, as not to be located due to smoke. The non-contacted indigenous groups count together around 80 to 300 people. However, some Waorani reported that from the Tagaeri group, only five are left who want to live with the rest of the Waorani. According to many, the non-contacted people deserve to be respected and left alone to live peacefully and according to their traditions. They are supposed to be no threat, only when one intrudes upon their isolated lives (D. Romo, personal communication, June 2, 2009; Larrea et al., 2009, p. 10; Latin American Herald Tribune, August 24 2009).

Rights

The indigenous tribes have different international and national rights. First of all, since being a UNESCO Man and Biosphere Reserve, Yasuni is also an indigenous Ethnic Reserve in which indigenous peoples need to be protected. The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), adopted by the General Assembly on September 13, 2007, defined indigenous rights (see box 3). The declaration defines a set of standards to protect and address the rights and worldviews of indigenous peoples worldwide:

- It recognizes the urgent need to respect and promote the inherent rights of indigenous peoples which derive not only from their political, economic and social structures, but also from their cultures, spiritual traditions, history and philosophies, especially their rights to their lands, territories and resources.
- Respect for indigenous knowledge, cultures and traditions contribute to sustainable and equitable development as well as appropriate management of the environment.
- The declaration affirms the crucial importance of the right to self determination of all peoples.
- It recognizes and reaffirms that indigenous people possess collective rights which are indispensable for their existence, well-being and integral development as humans.

The UN declaration emphasizes that indigenous peoples and their rights to property and territory allow them the right to be Free and have access to Prior and Informed Consent (FPIC) with regards to governmental approval of any project affecting indigenous lands or territories. „*A prerequisite for effective FPIC procedures is that indigenous peoples possess legal title to their traditional lands*" (Finer et al., 2008, p. 7). The Inter-American Human Rights System deals with FPIC since it stated that it is a violation of the American Convention on Human Rights for a government to grant an extractive concession without the consent of the indigenous people in the area. Furthermore, the Inter-American Court ruled several times that this right to property requires the allocation of their traditional territories. Also, the 1998 International Labour Organization"s Indigenous and Tribal Peoples Convention No. 169 mandated that indigenous people need to be consulted about developing projects in their territories. These rights can be perceived as some sort of procedural equity argument and are thus imperative to keep in mind when evaluating the Yasuni-ITT Initiative in relation to the participatory process and procedural equity. The Inter-American Commission granted precautionary measures in favour of the Tagaeri and Taromenane, in 2006, due to petroleum extraction and illegal logging threats. The latter measures call for the Ecuadorian government to prohibit the entry of „third persons" (including petroleum companies) into the territories of those groups.

The Ecuadorian government guaranteed rights to indigenous people, including: the right to maintain, develop and strengthen their identity and traditions; not to be displaced from their land, beliefs, knowledge and traditional medicinal practices; as well as the protection of ritual and sacred sites, plants, animals, minerals and ecosystems. The Ecuadorian Constitution includes an article which specifically mentions the rights of the Tagaeri and Taromenane: „*The territories of peoples in voluntary isolation are ancestral homelands, irreducible and untouchable, and they will be off-limits to all extractive activities. The State will adopt measures to guarantee their lives, respect their self-determination and will to remain in voluntary isolation, and ensure that their rights are respected. The violation of these rights will constitute the crime of ethnocide, and will be dealt with by the law*" (Government of Ecuador, 2008).

Furthermore, through the Presidential Decree in January 2007, several petroleum blocks were minimized in the extreme south of the Amazon and extraction activities were stopped to clear the way for the northern border of an Intangible Zone (territory) for the Tagaeri and Taromenane (ITT zone), an area of 758,000 ha. In 2008, Correa announced a plan to protect the isolated peoples more (Finer et al., 2008; Government of Ecuador, 2008; Larrea, June 2008).

6.2.4 Petroleum

An important economic resource in Yasuni is the petroleum and gas reserves. During the past decades, the petroleum blocks shifted further into the area and, as illustrated in chapter 5, Ecuador permits petroleum and gas exploration in national parks. However, strong opposition of indigenous peoples stopped exploration in two leased blocks (23 and 24) in the southwest of Yasuni for around seven years. The petroleum operations from the 1990s and from 2000 (blocks 15, 16 and 31) were accompanied with new access roads into the primary forests of Yasuni. Although the park contains protection rights, especially the untouchable zone, it is threatened to be another petroleum exploitation zone. This, since large petroleum reserves were discovered in ITT (Ishpingo-Tambococha-Tiputini, three petroleum blocks combined). According to Beicip Franlab (2004) and Petroproduction (2009), there are 846 million barrels of heavy crude petroleum with a density of 14.7 API[5] in the ITT block, which is remarkably dense. When the petroleum of ITT is daily extracted, around 107,000 barrels over 13 years can be produced. It is possible that there are another 1530 billion barrels in the area; however, this is uncertain as the 3D seismic prospection of the deposits has not been carried out (yet). Still, it is certain that it is one of the biggest petroleum reserves in Ecuador, and it accounts for 20% of Ecuador‟s total petroleum stocks. Next to that, Ecuador has a petroleum sector relation with Peru since several large petroleum reserves were discovered around Yasuni on the Peruvian side of the Peru-Ecuador border, which may trigger a new wave of petroleum development in Yasuni and Ecuador in general. However, with the new Ecuadorian Constitution prohibiting (new) extraction activities in protected areas, except by Presidential petition in the name of national interest, new developments have been postponed.

In total, there are around 100 companies active in Yasuni and most of them are international companies such as Repsol YPF (Spain); Sinopec (China); Agip (Italy); and Perenco (France). As in the rest of the Ecuadorian Amazon, some areas of other petroleum companies are taken over by Petroecuador. Furthermore, there are many other companies active in the Yasuni region to support the petroleum companies with activities such as logging and clearing the area(Finer et al., 2008; Larrea et al., 2009).

[5] The heaviness of petroleum stated by the American Petroleum Institute of the USA.

Box 6.1 Articles UN, Indigenous Rights

'Article 3
Indigenous peoples have the right to self-determination. By virtue of that right they freely determine their political status and freely pursue their economic, social and cultural development.

Article 4
Indigenous peoples, in exercising their right to self determination, have the right to autonomy or self-government in matters relating to their internal and local affairs […]

Article 8
1. Indigenous peoples and individuals have the right not to be subjected to forced assimilation or destruction of their culture.

Article 18
Indigenous peoples have the right to participate in decision making in matters which would affect their rights, through representatives chosen by themselves in accordance with their own procedures […]

Article 25
Indigenous peoples have the right to maintain and strengthen their distinctive spiritual relationship with their traditionally owned or otherwise occupied and used lands, territories, waters and coastal seas […] and to uphold their responsibilities to future generations in this regard.

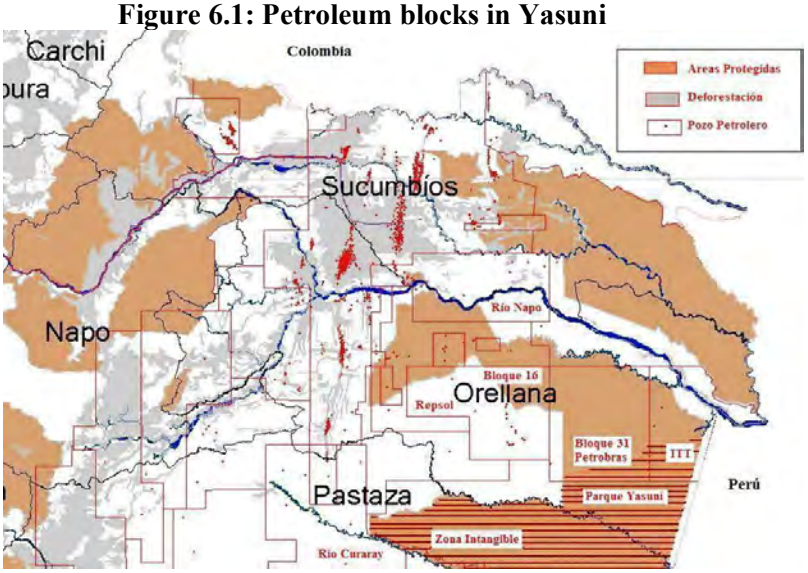
Article 26
1. Indigenous peoples have the right to the lands, territories and resources which they have traditionally owned, occupied or other-wise used or acquired.

Article 29.1
Indigenous peoples have the right to the conservation and protection of the environment.

Article 32.2
States shall consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free and informed consent prior to the approval of any project affecting their lands or territories and other resources, particularly in connection with the development, utilization or exploitation of mineral, water or other resources.

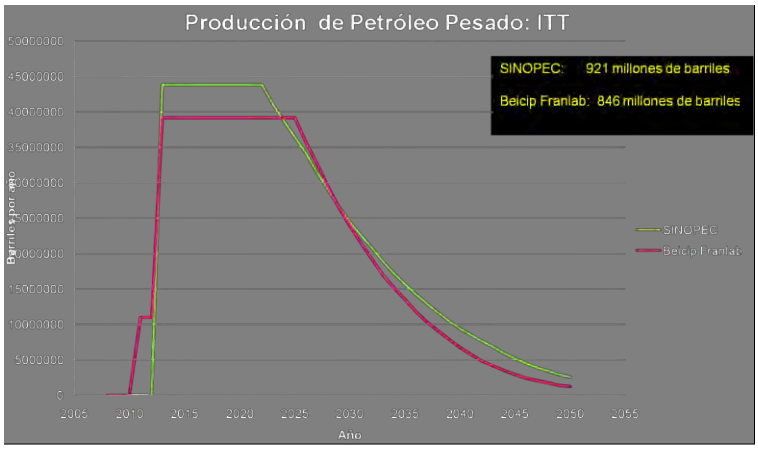
For the full text see: http://www.un.org/esa/socdev/unpfii/en/declaration.html"
Source: Amazon Watch, 2007, p. 6.

Figure 6.1: Petroleum blocks in Yasuni



Source: Larrea et al., 2009

Figure 6.2 Projected petroleum production in ITT



Source: Larrea et al., 2009

6.3 *Threats on Yasuni*

„The threats facing Ecuador's Yasuni National Park (Yasuni) are emblematic of those confronting the greater western Amazon region, one of the world's last high-biodiversity wilderness areas" (Bass et al., 2008, p. 1). These threats are described in the former chapter; however, it is important to mention what the additional pressures on Yasuni are.

The government may partly be responsible for the threats on Yasuni since it decided to protect the park; however, little is executed, due to lack of capacity, financial resources and efficiency. For example, there are only eight guards assigned to protect the area. If the government had implemented long term planning in terms of petroleum- and gas activities, agricultural practices, and sustainable development with all its dimensions, there would have been fewer problems in the region.

Threats on nature

The drivers of almost all problems in the region are related to leased and proposed petroleum concessions which cover the northern half of the reserve. A palm oil plantation which has been established near the park, north of the Napo River, is another driver of the threats facing Yasuni. Due to these developments, four petroleum access roads pose the greatest threat to Yasuni. This is accompanied by colonisation, deforestation, fragmentation, illegal logging, biodiversity loss and overhunting. However, due to a report from scientists, as well as strong opposition of the Waorani against the construction of new access roads, the government banned Petrobras (Brazil) from building a new road in July 2005 due to problems with contracts. The Ecuadorian government forced the company to redesign the project without a new road. As a response, Petrobras plans to use „off-shore" techniques, including helicopters and pipelines to transport the petroleum, materials, supplies, equipment and people to the sites. There are already off-shore techniques in place within the Amazon, such as in Block 10 and Block 15, yet, they are accompanied with roads.
Fortunately, there are few reported petroleum spills in Yasuni, in contrast to other Amazonian areas. The last large reported spill was in 2007, and there were a couple small ones in the last few decades. However, due to the roads and petroleum-related activities, scientists state that Yasuni might be one of the biggest deforestation areas of the world. As there is no control and planning in relation to petroleum extraction and agriculture, deforestation areas are moving further into the park. Also the tourist industry causes problems. Tourists are attracted by the indigenous groups living in the area, also by the non-contacted groups, and are therefore often trying to visit the park illegally. Moreover, ecotourism has been insufficient in scale and the regular tourist sector disturbs the area in terms of waste, pollution and more.

Climate change is another threat on the Amazon. The advantage of Yasuni is however that it is one of the wettest and most stable climatic regions of the Amazon, and will thus be less affected by drought and other climate change problems facing the rainforest. Furthermore, the intact large-vertebrate species increases the ability to protect plants and animals in the long term. Climate change will push tropical species up north to areas still intact, and corridors for migration are necessary to protect these species. Due to the beneficial conditions of Yasuni in relation to climate change, Yasuni

may function as such a corridor and area of refugee for migrating species and it is therefore crucial to conserve and protect this region to sustain biodiversity. Still, numerous species in Yasuni remain threatened or are in danger. The threat to amphibians is of particular concern, since their global diversity is mostly concentrated in Yasuni, and they are already the most threatened vertebrate taxa worldwide (Bass et al., 2008; Finer et al., 2008; SCYNP, 2008).

Threats on humans

Although the indigenous peoples living in Yasuni refused to be contacted by outsiders, in 1956 the Waorani were contacted through the Summer Institute of Linguistics (SIL) from the USA, a religious group of missionaries. The missionaries tried to convince these „warrior savages" to be Christians, and a program was set up to locate the „savages" in the „Waorani Protectorate", a 16000 hectares area where many of the indigenous still remain marginalized and poor. The Christianisation proved beneficial for the petroleum companies who started to colonise the area in the 1970s. The contact with white people, a totally different world and culture, was a too drastic transformation for the indigenous peoples. The consequences were drastic, and are already described in the previous chapter. In addition to the problems related to the contacted indigenous peoples, are the two major issues concerning hydrocarbon activities and indigenous peoples living in voluntary isolation: the lack of understanding to the full extent of the non-contacted groups and the debate around the „untouchability" of their terrain. Testimonies from local Waorani indicate that Taromenane and Tagaeri are sometimes located in petroleum extraction areas, north of, and outside the Untouchable Zone. Moreover, they even killed „intruders" who entered or were around their terrain (Latin American Herald Tribune, August 24 2009).

6.4 The Yasuni-ITT Initiative

The idea of the Yasuni-ITT Initiative commenced in 2007 as an alternative to proposals of international petroleum companies from, inter alia, China and Brazil, to start exploiting more petroleum blocks in Yasuni (especially ITT). Therefore, the Minister of Foreign Affairs at the time, Alberto Acosta, considered to start extraction petroleum in the area. However, E. Martinez (Accion Ecologica/Oilwatch) and C. Larrea (professor at Universidad Andina Simon Bolivar) were opposed the idea and started to negotiate with their friend, Acosta, to formulate an alternative proposal for Yasuni to protect the area from petroleum extraction. They presented the initiative to President Correa in 2007, who approved the idea and suggested to develop it further. In September 2007 at the United Nations, Correa stated that Ecuador would keep the crude petroleum of ITT underground indefinitely, if the international community donates at least half of the profits (50%) the State might have otherwise received through extracting the petroleum (on May 2009, the total amount was between US$14 and 15 billion). The president assigned a team to promote the initiative, including: R. Sevilla (president of Yasuni-ITT), Yolanda Kakabadse (commission member), Francisco Carríon (commission member), Carlos Larrea, (technical advisor), Minister of Foreign Affairs, Fander Falconí, Minister of Environment, Marcela Aguinaga, and Malki Saénz (secretariat) (Minister of Cultural and Natural Patrimony, Maria Fernanda Espinosa also actively promotes the initiative). Different stakeholders such as Martinez and Acosta were consulted and others got involved on a voluntary basis. Although the president urged the Yasuni-ITT team to present the final initiative as soon as possible, several times the deadline needed to be extended as it was not yet finalized (C. Larrea, personal communication, June 24, 2009).

The initiative declares that Ecuador will need to participate in climate change mitigation since, as Stern (2007) states: not only rich and developed countries need to act upon climate change, but developing countries as well. „*The essence of the initiative is Ecuador's commitment to refrain from exploiting proven reserves of 846 million barrels of heavy crude petroleum, thus preventing the emission of 407 million metric tonnes of CO_2, which would result from burning these fossil fuels*" (Larrea et al., 2009, p. 6). This would not only be an example of combating climate change as a global collective, but also introduce a new economic logic for the 21st century: a post-petroleum era.
In short, the initiative declares:

a. *It reduces CO_2 emissions*:

- It combats global warming as it prevents the burning and release of carbon reserves into the atmosphere through leaving the petroleum of ITT indefinitely underground and avoiding deforestation, thereby conserving the Ecuadorian Amazon, one of the big carbon sinks in the world. Furthermore, the initiative states that through the international fund, it will set up programs of reforestation and forestation, to increase the absorption of CO_2 from the atmosphere.
- It will reduce the use of petroleum in energy/power generation and industrial productions by replacing these with carbon free technologies (renewable energy) for industry and households in Ecuador. This will reduce CO_2 emissions and through it, Ecuador can develop in a sustainable, alternative, and just way.

b. *It protects biodiversity and indigenous peoples:*

- Biodiveristy loss is preveneted by guaranteeing the protection and sustainable management of 38% of Ecuadorian territory, the proposal prevents biodiversity loss. Next to that, it guarantees the protection of the Taromenane and Tagaeri, the non-contacted indigenous groups.

c. *It reduces poverty:*

- Poverty and inequality will be reduced in the country by investing in education, training, health, sustainable technologies and non-extractive economic activities. This will favour the poorest and most marginalized sectors of the Ecuadorian society.

The goals will support and address the new SD policies of the country, as defined in the new constitution and the National Development Plan. Moreover, the initiative coincides with the Millennium Development Goals.

6.4.1 Funds

In return for keeping the crude petroleum underground in the ITT field, Ecuador requests for international cooperation and international donations for creating a capital fund. The capital fund will be deposited to an international trustee, the UN Development Programme, and it will be administered by a steering committee with the participation of the main donors, to be certain that the fund is taken care off in a trustworthy, objective, fair, independent and transparent manner.

The country aims at receiving the first funds prior to the end of 2010. The investments of the fund will constitute the Trust Fund guarantee. For the proposal to work, the minimum capital compensation needs to be equal to half of the amount Ecuador would otherwise receive through the extraction of the petroleum in the ITT field and the value needs to be equivalent to the value of CO_2 from petroleum stored in the ground. Ecuador requests for half of the amount as it will provide the rest of the funds through: own contributions; the new climate change funding mechanisms of the post-Kyoto protocol; and investments of companies interested in the new development model of the country. Petroleum prices fluctuate greatly and are difficult to predict. Therefore, the estimation of the amount of capital needed to cover the opportunity costs of the petroleum extraction and current prices of carbon credits. The calculation of both estimates will be updated each year due to market fluctuations. The price of the first benchmark WTI[6] crude counted in May 2009 around US$61.21. Using this number, the estimated value of the petroleum in ITT is US$ 6.979 billion, with a discount rate of 6%. *´The market value of the CO_2 emissions avoided is a similar sum, US$ 7.188 billion, if one uses the current CER[7] prices in the European market ETC"as a reference´* (Larrea et al., 2009, p. 12)[8]. The latter amount is used as the estimation of the total funds needed; however, this can change over time as prices fluctuate. In addition, the re-calculation of the avoided CO_2 emissions value is important

[6] WTI: West Texas Intermediate crude benchmark is used to describe the heaviness of petroleum and is used primarily in the U.S. WTI is light and sweet (low-sulfur), which makes it ideal for producing products like low-sulfur gasoline and low-sulfur diesel.
[7] CER: Carbon Emission Reductions.
[8] In May 2009, CERs were traded at US$ 17.66 per metric tonne of CO_2. The EU Emission Allowances (EUA) were in May 2009 valued at US$ 19.91 per tonne.

to reduce the spur of future governments to refund the money and extract the petroleum. The CO_2 emission value calculation was based on the 407 million tonnes of CO_2 emissions prevented by only the non-exploitation of the petroleum in the ITT field, excluding prevented emissions from deforestation and emission absorption by reforestation and forestation.

The funds will come from two main sources: voluntary contributions and transactions linked to the carbon market. *The voluntary donations* can be done by:

a) *„Governments of Partner Countries and International Multilateral Organizations*;
    1. *Contributions that come from emission permit auctions or carbon taxes.*
    2. *Debt – for – conservation swaps.*
    3. *Other donations.*
    4. *Specific projects in renewable energy generation, deforestation prevention, conservation and social development.*
b) *Contributions from Civil Society Organizations.*
c) *Contributions from socially and environmentally responsible private sector companies.*
d) *Contributions from citizens worldwide"* (Larrea et al., 2009, p. 14).

The initiative aims to integrate *the market based contributions* into existing carbon markets, such as the European Trading Scheme market (ETS) (see appendix III). The market based contributions will come from selling Yasuni Guarantee Certificates (CGY) of emission prevention through the non-exploitation of fossil fuels, as an alternative mechanism to the emission permit auctions. In exchange, the Ecuadorian government promises to keep the ITT petroleum underground and will issue CGYs for the nominal value of the compensations, which can be up to a total of 407 million tonnes of CO_2 not emitted in the atmosphere. An alternative is that countries can contribute to the fund by using other funds from current auctions of the EUA and the possible carbon emission taxes on CO_2 levied on transport and agriculture (as in Sweden and Slovenia). Although this mechanism does not currently exist, the Yasuni-ITT Initiative aims at creating this mechanism as a pilot project. If future governments nonetheless decide to exploit the petroleum of ITT, the CGYs will become exchangeable and the capital fund will return the contributions to the donors, suspend capital investment in energy projects, and the payment of interest to Ecuador. The announcement of exploiting the area needs to be five years in advance due to the long term profits earned by the exploitation of petroleum (Larrea et al., 2009).
„The real backing for the guarantees will be the value of the investments made by the capital fund" (Larrea et al., 2009, p. 14). This capital fund will be invested in different development projects (see next section), which will be eligible to receive funds if they involve a measured amount of risk, have some level of profitability, generate monetary interest, and contribute to sustainable development of the country.

The idea of including the initiative into the carbon market has not received positive responses, especially from environmental groups. This is because many are opposed to the idea of „off-setting" GHG emissions by buying credits of developing countries or through implementing projects in these countries. This is associated with „greenwashing". However, later it is likely necessary for the proposal to function properly, especially if some major donors will not invest in the fund if it is not included in the carbon market (Larrea et al., 2009; Larrea and Warnars, 2009; N. Greene, personal communication, June 19,2009).

6.4.2 Projects and benefits

The initiative has numerous benefits and this section explains these in the following order: firstly, a considerable amount of GHGs emissions will be prevented by keeping the petroleum underground; secondly, the investments of the capital fund will benefit several projects related to: deforestation, protection of areas and forestation as well as renewable energy; and finally, poverty and inequity reduction.

By keeping the petroleum underground, 407 million metric tonnes of CO_2 emissions will be directly prevented. However, the actual total value of prevented emissions is higher when one takes into account the direct and indirect effects of the initiative not only due to the abatement of deforestation, emissions generated by petroleum production, the construction of infrastructure, methane produced by cattle in colonized areas and petroleum depended industries plus households, but also through reforestation and forestation projects. The possible prevented CO_2 emissions are noticeably surpassing the annual emissions of Brazil (332 mil. M.T.) and France (373 mil. M.T.), or is equivalent to Ecuador‟s own emissions for 13 years.

The funds will be used to prevent deforestation in 40 protected areas of Ecuador, counting for 4,8 million hectares. This will be done by decreasing the problem gradually over a period of 30 years. As such, 777 million metric tonnes of CO_2 emissions will be prevented. Additionally, appropriately 5 million hectares of natural areas that belong to indigenous and Afro-Ecuadorian communities will be properly managed. Eventually, the total protected area will account for 38% of Ecuador. Reforestation, forestation, natural regeneration and appropriate management of one million hectares of forest owned by small landholders will be established. Additionally, different studies will be conducted to plan protection of different natural areas, eco-tourism, sustainable development projects and to construct a renewable energy map. The studies may entail a strategy to maintain biodiversity and protect indigenous peoples.

The capital fund for the country will be used for different renewable energy projects. Investments in hydroelectric and geothermal projects have currently the greatest potential in Ecuador (see chapter 4). The Yasuni-ITT fund could acquire preferential shares in these projects if they meet necessary investment parameters. Furthermore, the type of share of the projects has a predetermined fixed yield, which is independent of a company‟s profits. This fixed interest yield depends on the characteristics of each separate renewable energy project, maintaining a minimum risk, and allowing the Ecuadorian government to safely receive interests from the capital fund. The projects contribute to sustainable development in Ecuador and create additional reductions of CO_2 emissions. The elimination of thermoelectric power generation in Ecuador and the re-allocation of renewable sources will prevent an additional 43 million MT of CO_2 emissions, with a value of US$ 263 million (at a price of US$ 17.66 per MT). Furthermore, the improvement in energy efficiency in the country could have an additional contribution to at least 1 billion MT of avoided emissions in the next 30 years. In addition, the energy demand may change through replacing traditional light bulbs with energy-saving ones, and by removing taxes on the importation of hybrid and electrical vehicles. This energy policy will continue by funding solar panels for heating water in households, encouraging electricity-driven public transportation in cities; capturing greenhouse gas emissions from sanitary landfills; and the use of biogas digesters in rural households.

Finally, the initiative aims to reduce poverty and inequity through investments in education, health, and housing projects, as well as in the creation of productive and long-term employment in sustainable development projects. The projects will put at the forefront sustainable human development in the projects‟ areas of influence, and the extraction-based development model will be abandoned. Furthermore, the indigenous rights may accurately be protected as their cultures and territories will be preserved through different projects of health improvement, education, economy, preservation of culture and renewable energy allocation (Larrea et al., 2009; Larrea and Warnars, 2009; UNDP, 2008).

All the projects will be undertaken under the new constitution and the national policy of sustainable development.

6.4.3 Replicability

Although Ecuador will acts as the pilot country for the implementation of the Yasuni-ITT Initiative, other countries could design and implement similar projects. These countries need to comprise certain conditions in order to implement the initiative, and as such they are compelled to:

- be a developing country,
- be a „megadiverse" country located between the tropics of Cancer and Capricorn and contain tropical forests, since the proposal aims at protecting biodiversity areas and,
- have significant fossil fuel reserves in highly biological/environmental and culturally sensitive areas.

The following countries fulfil all of these conditions: Bolivia, Brazil, Colombia, Costa Rica, Democratic Republic of Congo, Ecuador, Indonesia, India, Kenya, Madagascar, Malaysia, Papa New Guinea, Peru, the Philippines and Venezuela. Officially there are 19 other countries selected by the United Nations Environmental Program (UNEP) as being „megadiverse" and since most of them fulfil the conditions described above, the majority could be eligible for the initiative, except for China, USA, South Africa and Mexico since they fall under emerging or developed economies (Larrea et al., 2009, p. 20).

6.4.4 Comparison with other mechanisms

There are numerous arguments for why the Yasuni-ITT Initiative differs from existing and proposed climate change mechanisms and why it cannot be included within the Kyoto Protocol. In this section, the proposal is compared shortly with the Kyoto Protocol and CDM, followed by REDD and the proposals of Bolivia, Saudi-Arabia plus Indonesia.
The Kyoto Protocol, as previously noted, has not yet been successful in decreasing GHG emissions. New and innovative forms of projects are needed to actually abate overall GHG emissions. With this in mind, the Yasuni-ITT Initiative team states that the proposal is such an innovative and effective alternative to reduce GHG. The Initiative differs from the CDM as it considers more aspects than the CDM in terms of keeping petroleum underground, protecting biodiversity, reducing deforestation and protecting indigenous rights. Furthermore, the CDM only compensates for GHG emission reductions already made in other parts of the world, and as such, it does not reduce emissions in a strict sense. The Yasuni-ITT Initiative is different from this due to its additionality and non-leakage, as well as that it the CGYs can be accepted in a different way than the credits of the CDMs, as described above. Finally, the Yasuni-ITT Initiative is a proposal from the South, and implemented by the South, although through financial support from (generally) the North. This is substantially different from the CDM as the CDM is implemented and developed for the South, by the North.

In relation to REDD, the Yasuni-ITT Initiative is different, as it integrates three goals of reducing emissions by keeping fossil fuels underground, protecting biodiversity, increasing SD, and particularly tries to protect indigenous peoples. REDD will mainly be focused on protecting forests, reducing deforestation, increasing agro-forestry, sustainable tropical forest management and protecting indigenous peoples" rights through financial compensation of developed countries and the carbon market.

The Ecuadorian proposal was developed previous to the proposals of Bolivia; however, they do not differ much in theoretic and ethical sense. The Bolivians also propose to refrain from oil extraction. Additionally, they suggest to construct a new funding and international governance model. The Bolivian proposal remains a less concrete than the Ecuadorian one, given the latter already comprises significant (financial) support and will soon be reality.

The difference with the proposal of Saudi Arabia and other petroleum-exporting Arab countries is that Ecuador not only exclusively recognizes the urgency and seriousness of global warming, but also the need to adopt new and effective policies. Furthermore, Ecuador does not aspire to receive funds for the potential adverse effects of climate change mitigation efforts as the Arab countries do. On the contrary, Ecuador seeks to contribute directly in decreasing GHG emissions. Finally, Arab countries in contrast are not as poor as Ecuador, nor do they have highly biodiverse regions.

The initiative differs from the Indonesian proposal as it aims at keeping fossil fuels underground and does not request for compensation in refraining from planting African palm trees. Although there are similarities between the proposals with regards to preventing deforestation, the Ecuadorian proposal includes more aspects such as biodiversity and indigenous peoples" protection, and might thus be more comprehensive than the Indonesian proposal. Furthermore, one could state that a

fundamental difference between the two proposals is related to the difference between fossil fuels and first generation biofuels (from palm and corn): the first releases carbon stored within the earth and the second consumes carbon stored in current plantations, which come with different environmental, social and economic negative impacts.

6.4.5 Critiques?

Different critiques lay upon the initiative from national and international stakeholders , including governments, markets and the civil society. Firstly, many argue that Ecuador needs to take a minimum of abatement efforts domestically to protect nature and the climate system, the so called *supplementarity* (Schneider, 2007). Taking supplmentarity into account, Ecuador is committed to change its policy and implement better environmental regulations through the new constitution. For example, Article 407 of the new constitution prohibits extractive activities in protected areas from 2008, except for certain cases. The new constitution recognizes the rights for nature and social rights (*Buen Vivir)* and the country is implementing different environmental and sustainable development projects. The new constitution can only prevent future, not previous and current, extraction activities, and therefore it cannot protect already affected areas. Extraction can only take place in relation to the new constitution when the president gives consent with the full support of the parliament. In other words, according to the new constitution, future petroleum and gas activities are prohibited in ITT through the new constitution. The critique from numerous international stakeholders is exactly related to the latter issue. However, Ecuador, like other developing countries in Latin America, has traditionally had limited economic resources to stimulate development in the country. Therefore, the international community is called upon to support them in achieving this new sustainable society by implementing Yasuni-ITT and the new constitution. Moreover, Ecuador often points out that the international community has an obligation towards to assist them in overcoming the extractive economy, based on natural resources (Larrea and Warnars, 2009).

Secondly, much critique lays upon the fact that Yasuni needs to be protected in accordance to the rules of a UNESCO Man and Biosphere Reserve (the nature protection regime factor). However, again, Ecuador has had limited economic resources to protect the area completely. Even so, Ecuador has tried to change its policy with the new constitution. Moreover, UNESCO itself supports the initiative officially.

One of the most common critiques from civil society stakeholders and scientists lays upon the use of the carbon market as a funding mechanism for Yasuni-ITT. This market is in their view increasing the unequal situation between efforts of action in rich and developing countries. Rich countries are in their view not completely responsible for GHG emission reductions as they can „off-set" their emissions by investing in developing countries" initiatives, such as the CDM. As such, real reductions in these „elite" countries are not achieved, which might increase the non-additionality and leakage. With the Yasuni-ITT Initiative, the use of the carbon market will mainly be the case with North American countries as they may have the possibility of „off-setting" their emissions by investing in the initiative and earning CGYs since it may be that these countries will not voluntarily contribute to the fund. However, due to the various discussions and critiques upon this, this issue is currently being discussed within the Yasuni-ITT team. In addition, the CGYs would only count as warranties for countries who invest in the initiative to be certain that Ecuador does not exploit the petroleum in the future. If Ecuador does exploit the petroleum, it needs to return the funds, equivalent to the value of the CGYs.

Additionality and leakage issues of the initiative are often discussed within the international community. The problem of leakage (reduced emissions in one place will be replaced by/increase emissions in another) might be taken care of with the Yasuni-ITT Initiative through different aspects. First of all, one can demonstrate that the non-exploitation of the ITT field will reduce global CO_2 emissions in the long-term. Indeed, it is true that in the short-run, the unexploited petroleum can be replaced by another if the internationally installed capacity is there[9]. However, over the long-term, the reduction in CO_2 emissions are real, because petroleum is a non-renewable natural resource, and

[9]According to the widely accepted theory of the Hubbert peak, the world production capacity of oil is currently approaching its maximum and then will begin to decline below demand due to the limitation of world reserves. See: Deffeyes, Kenneth. *Hubbert's Peak. The Impending World Oil Shortage. Princeton: Princeton University Press,* 2001.

therefore finite. Moreover, estimates of global petroleum reserves project that at the current rate of extraction, global petroleum production will last for only 40 more years. Within this period, not extracting petroleum is a net positive contribution (BP, 2008). The ability to replicate the initiative increases the non-leakage aspect since a reduction in oil drilling will be a strong international incentive and push-factor for alternative energy sources‟ projects. This will then reduce global emissions on both the short- and long term. Furthermore, by replicating the initiative in different countries, the absorption and reduction of GHG emissions through the decrease of deforestation and increase in reforestation projects will reduce global emissions, thus limiting the leakage problem. The environmental additionality of the initiative is high due to the non-leakage aspects and the real environmental positive effects through the different projects. The initiative is also environmentally additional as the European Union can accept the inclusion of CGYs in a different way than it does with CDMs. If the CGYs are included in emission trading without adding new certificates, but as a fixed percentage (say 1%) of the European Allowances (EUA), then there will be a real net reduction in GHG emissions. Furthermore, the investments through the voluntary contributions and transactions in the carbon market with CGYs will be truly financially additional to existing investments since a mechanism such as Yasuni-ITT does not currently exist. Yet, one needs to remain critical as all these additional and non-leakage aspects remains to be observed in practice (Anger et al., 2007; C. Larrea, personal communication, June 24, 2009; Schneider, 2007; Olhoff et al., 2004).

6.5 The participatory process of the Yasuni-ITT Initiative

Stakeholders and affected groups of the Yasuni-ITT Initiative have varying quantities of participation within the development of the proposal. The participatory process is imperative to describe and explore in more detail in relation to procedural equity aspects of the initiative. In this section, the views and amount of participation with the development of the Yasuni-ITT Initiative is described of the Ecuadorian government, scientists, NGOs and indigenous groups, the market, and international stakeholders.

6.5.1 Government

The Ecuadorian government is the official owner of the petroleum reserves in the Amazon. The state has released 65% of the area for petroleum exploration. However, with the initiative, the new constitution and different environmental and sustainable development projects, the position of the government seems to change. The government is actively involved with the Yasuni-ITT project and those who are working on it are assigned by the government. Moreover, the previous minister of Foreign Affairs, Alberto Acosta, was one of the initiators of the initiative and President Correa, officially supports the proposal. With the president, the Ministry of Foreign Affairs, the Ministry of Environment, the Ministry of Cultural and Natural Patrimony support and collaborate with the development and promotion of the proposal.

Although the president is genuinely interested in sustainable development, environment and indigenous peoples, it became clear that he is mostly interested in the economic incentives of the initiative, and has therefore also considered the alternative of extracting the petroleum in ITT through off-shore techniques, proposed by Petroecuador. Different ministries are also interested in arguments related to economic aspects and ecological economics as they are underlying the aspect of the ecological debt of developed countries towards developing countries in relation to biodiversity loss, resource depletion, climate change, and off course, environmental equity. The government aims at going beyond a petroleum- and extraction- based economy and balancing the economy with SD through the changes in the constitution and with the Yasuni-ITT Initiative. On the other hand, currently, the government does not protect other natural areas, such as the Galapagos Islands, but this is mainly due to lack of financial resources and capacity (Acosta et al.,2009; Larrea et al., 2009).

6.5.2 Scientists

Different scientists contribute and support the initiative. First of all, Carlos Larrea, professor at the University of Andina Simon Bolivar in Quito, Ecuador, is the technical advisor of the proposal and has written the official proposal together with other scientists and volunteers such as Roque Sevilla, Natalia Green and Alberto Acosta. Secondly, scientists such as Jane Goodal, E.O. Wilson, and Joan Martinez-Alier officially support the initiative and state that Yasuni needs to be protected. The scientists working with the proposal are driven by different views and backgrounds such as economics, ecology, biology, and social sciences. In all these aspects, the scientists state why Yasuni-ITT is an innovative and ambitious initiative that needs to be implemented. In addition, as scientists are not only driven by non-normative aspects, they support the initiative based on certain normative and subjective norms and values. This is not only the case with the scientists working on the proposal, but also those supporting it. Some scientists are however sceptical about the initiative, such as D. Romo and R. Manosalvas, due to the way the initiative is developing with certain lack of participation of civil society groups (Gristmill, 2009; Lyonia, 2008; SCYNP, 2004; TED, 2008; San Sebastián and Córdoba, 1999).

A concrete view of scientists on the value of Yasuni was stated through the document of Bass et al. (2008):*„The global conservation significance of Yasuni may weigh heavily in upcoming decisions regarding the park, such as whether or not to proceed with petroleum development"* (Bass et al., 2008, p. 1). Due to its global value of high biodiversity, genetic diversity, cultural aspects of indigenous groups, and the potential to sustain the area, scientists all over the world state that protecting Yasuni is a global conservation priority of the first order. Indeed, *„If the world's most diverse forests cannot be protected in Yasuni, it seems unlikely that they can be protected anywhere else"* (Bass et al., p. 10). The global conservation significance of the park, may weigh heavily in upcoming (global and national) conservation, development and investment decisions. The UNESCO status of the park is another key issue for protecting the park from the above described problems.
Therefore, scientists are recommending to:

- Not construct new roads, including petroleum access roads, within Yasuni National Park or its buffer zone. Scientists state that the elimination of new roads could significantly reduce the impact of most petroleum projects. Using off-shore techniques, including a petroleum pipeline without constructing roads is therefore the alternative to the Yasuni-ITT project when the project is not supported by the international community.

- Not develop new petroleum exploration or development projects in Yasuni, particularly in the remote and relatively 412 intact Block 31 and ITT Block.

- Ensure biological connections from Yasuni and the Waorani Ethnic Reserve to nearby higher elevation Andean habitats for migrant species due to climate change.

- Create a system of strict protected areas (that is off-limits to petroleum exploration and exploitation) in the northern Peruvian Amazon, forming a trans-boundary mega reserve with Yasuni National Park.

- Eliminate petroleum activities in northern Peru to conserve the high biodiversity of the park and the territories of indigenous peoples (Bass et al., pp. 9 & 10).

6.5.3 National NGOs and indigenous

Representatives of Ecuadorian NGOs, such as Accion Ecologica (AE), a member of Oilwatch, and Pachamama, worked closely together with scientists, representatives of the State and others on the initiative. However, through interviews and observation, it became clear that ideas and views upon the participation and support of civil society groups are ambiguous.

NGOs

According to different NGOs, the initiative can serve as a new mechanism for addressing environmental equity; a proposal that serves as a real solution to the climate problems where non-industrialized countries are compensated for moving beyond non-sustainable development practices. NGOs perceive the initiative as a break from the „business as usual" practices, as they believe that it shall have a significant effect on the CO_2 emission economy of Ecuador, beyond the dependency on petroleum and protecting the lives of isolated indigenous groups. Furthermore, NGOs conceive that Ecuador will go through a major transformation with the initiative to a sustainable, equal and humane society. With it, the groups base their arguments upon North-South relations and the ecological debt of North towards South due to the extraction of natural resources in Ecuador.

In general, NGOs support the initiative. AE and Pachamama participate with the development of the proposal, and published documents about the initiative and the background of the idea. AE has been the most important NGO involved with the initiative due to the fact that E. Martinez, the president of AE, developed the initial proposal together with Larrea and Acosta. Although AE is the most outspoken NGO, it is an NGO more concentrated on action, rather than implementation of projects. In addition, much criticism lies upon the policies of the NGO in relation to their ideals. Different NGOs work for the initiative and on other projects in Yasuni, for instance, some work together with local groups and other countries to attempt to duplicate the initiative in Bolivia, Brazil, Nigeria and Indonesia. However, some representatives of NGOs state that the initiative development has been quite „closed" in terms of not many other NGOs being able to contribute, although some wanted to. In addition, many thought the initiative was only a green washing concept which would never be implemented. Furthermore, AE state that the initiative is against their views since they argue that it would be similar to REDD, which they oppose due to the problems with indigenous peoples" rights and „off-setting" of developed countries GHG emissions through the carbon market. Yet, in the end, many NGOs hope that the initiative will change the cause of problems related to the petroleum industry and economy. Still, some state that they will only support the initiative if it *does* not include the carbon market aspect (Amazon Watch, 2007 & 2008; TED, 2008; Oilwatch, a&b 2007; R. Manosalvas, personal communication, March, 2009).

Indigenous and local peoples

Although different indigenous groups have been consulted, the technical team of the proposal admits that the amount of participation of indigenous and local groups with the development of the initiative has been little. There has been some consultancy, but no active participation with the development of the initiative of indigenous peoples. Various indigenous people, such as M. Ima, president of the women indigenous group, are disappointed about this, especially since the international and national indigenous peoples" rights (see section 6.2.3) suggest that they need to be consulted prior to implanting projects in their territories, which can be seen as some sort of pro-participatory equity argument. The views on, and reasons for the non-(active) participation of indigenous groups differ greatly, basically among two groups: those developing the proposal (the technical team) and outsiders of the proposal who would also be affected by the initiative such as indigenous peoples. Different reasons were presented through the interviews for lack of participation.

Firstly, the proposal needed to be technically developed and was therefore in an architectural state. This stage has been, according to those working on the proposal, incredibly political, scientific and complicated due to the arguments, debates and aspects of the carbon market, calculation of the funds, and the general functioning of the proposal. According to the Yasuni-ITT team, when constructing the proposal, a participant needs in order to understand and comprehend these aspects. Furthermore, members of the team stated that it would probably be difficult for indigenous and local peoples to comprehend these complicated and technical aspects of the proposal in the first place and thus, they would not have functioned as an added value as participants of the development of the initiative. In addition, due to the possibility of lack of understanding, the indigenous and local groups would wonder for whom the funds are, to where it would be allocated and may argue that it should be appointed to them. However, indigenous leaders and chairs of indigenous groups may be able to comprehend the whole technical and difficult aspects of the proposal, and therefore, they might be able to contribute and participate accurately with the development of the proposal. However, interviews

with indigenous peoples have indicated that the proposal may not be as hard to comprehend as originally thought.

The second argument for the non-participation is related to the amount of stakeholders participating with the proposal. R. Sevilla (personal communication, June 3, 2009), the president of the initiative, stated that it would be impossible to consult whole groups of stakeholders, although, it would be more democratic. Furthermore, Sevilla stated that even though it is a political proposal, working with all the different stakeholders would lead to chaos and non-coordination since countless competing ideas and arguments for the initiative exist. In addition, he stated that it is a *proposal* of the State: if they would have been consulted fully, it would not have been a proposal. Yet, global examples exist where participation of different groups is possible, in which the heads of groups are then consulted.

Another argument for the lack of participation was the constraint of time. The president changed several times the deadline for finishing the initiative: first, the technical team had six months (until December 2008); however, since the proposal was not finished, the president added another six months, stating that if it would not be completed by then, he would cut off the whole project. In those couple of months, the proposal changed several times due to different ideas, views, and situations. Hence, in terms of time, deadlines, and the development of the proposal, the situation was quite unstable. Furthermore, the technical team needed to present the proposal as soon as possible to the President to get official approval.

The final argument for non-participation is that the proposal first needed to be promoted globally, to examine whether it would gain international support and in order to set up the fund. Since the support of different groups and governments is growing, the technical team started promoting the proposal nationally through workshops, conferences, debates and more. The technical team informed the indigenous groups and others that this initiative is amazing since it saves the rainforests, indigenous rights, and combats climate change. In the end, the petroleum blocks are not from indigenous groups, but from the government. The government has always allowed companies extract the blocks. However, now, the government will protect the forest and improve the situation for the indigenous groups. If there are comments upon the proposal from national groups during and after the campaigns, the technical team may consider to implement some changes in the initial initiative. According to R. Sevilla, if indigenous and local groups are against it, it is a difficulty of management (currently a problem on the Galapagos). This is related to the problem that indigenous people who live in Yasuni, might wish to receive something concrete (such as money) for the projects and initiative. Therefore, when implementing the projects of Yasuni-ITT, it must be through balanced negotiation and participation of different groups, otherwise they might oppose to the initiative and work against sustainable development projects in their region. In relation with the previous, it may be important for the country and the government to show to the international community that indeed indigenous peoples can and do participate as it is (implicitly) an aim of the proposal.

To conclude, participation with the development of the proposal is lacking; however, when the proposal is accepted by the international and national community, it is stated that participation will grow through the inclusion of different stakeholders within a steering committee of funds and through the implementation of the different projects. The steering committee will decide how the funds will be allocated and to what extent. Yet, it may be that certain stakeholders, as indigenous peoples, will not have a vote within the steering committee (Larrea et al., 2009, Oilwatch, a&b 2007).

Through the interviews with different stakeholders, it became apparent that the views and interests of local and indigenous groups are ambiguous. Generally, the groups base their ideas on philosophical aspects of their cultures, with nature, environment, as well as basic human and indigenous rights. The groups will probably not disagree with the proposal, since the conflicts and problems which they are facing today will be replaced by non-activities in their territories and an improvement in terms of education, health, etc. In addition, the groups are strongly against the extraction of petroleum in their territories due to the impacts and external problems related to them. Indigenous groups could criticize the monetary compensation for their territories which should already be protected due to international and national laws, comparable to the critiques on REDD and its compensational aspects. In addition, locals wish to protect their region; however, since they are depended on the monetary support from petroleum corporations for health and education now, they have a dubious position. However, with the

initiative, this may shift positively; the region will be protected, and also their health and education level will increase. Yet, as there are problems between the government and some indigenous groups concerning other issues which influence the proposal and the implementation of it, one cannot state whether the initiative may have a positive outcome on these issues or whether it will even be implemented accordingly (Amazon Watch, 2008&2009; Acosta et al., 2009; M. Ima, personal communication, July 10, 2009).

6.5.4 Market

Petroleum companies are interested in the petroleum in Yasuni; however, different petroleum companies have different views and stakes in relation to the Yasuni-ITT Initiative. To understand the views and stakes of the petroleum companies, it is imperative to examine different companies which are active in Ecuador and Yasuni.

Petroecuador is the double-face of the government since it is the Ecuadorian State petroleum company. The company has been discussing with the developers of the Yasuni-ITT Initiative to convince them that using off-shore techniques for extracting the petroleum out of ITT are the best, alternative options for the Yasuni area. Petroecuador may acknowledge environmental and social impacts in relation to their activities in the region and as such, it seeks a solution (the off-shore technique) to still extract petroleum reserves. This inclines that petroleum companies influence and participate with the Yasuni-ITT proposal. Other companies, such as Repsol YPF from Spain, may consider the Yasuni-ITT Initiative as a good proposal since such companies have more profitable opportunities to extract petroleum in other countries. Hence, one may state that for these companies, it is rather a matter of location and opportunity to move somewhere else to operate. In addition, companies generally do not vigorously oppose to the idea.

Other businesses which are active in the renewable energy field, forestry or other sectors, are not yet actively opposing the idea. These other sectors may be able to participate when the proposal is implemented by, for example, reforesting areas or implementing sustainable forestry management (Finer et al., 2008; TED, 2008; Oilwatch, a&b 2007).

6.5.5 International stakeholders

Different international stakeholders support the Yasuni-ITT Initiative: Desmund Tutu, Michal Gorbatjov, Prince Charles, Vandana Shiva, among others. Generally, these stakeholders welcomed the idea as very innovative, even revolutionary. Some international organisations were sceptical in the beginning as they regarded the proposal as „utopian". In addition, they believed that criticizing the proposal would only serve as an element to have a „clean conscience", while continuing oil extraction in the same way as before. However, their opinions changed over time, realising that the initiative gained more international support. Even so, several governments officially support the initiative. *´The German Parliament – the Bundestag – was among the first official supporters of the Yasuní-ITT initiative. It welcomed the Ecuadorian proposal when it was presented and called upon the German government to assist Ecuador in scrutinizing and developing the proposal further´* (U. Kozcy, personal communication, August 10, 2009). As a consequence of this support, the German parliament is the first to invest in the initiative"s fund with US$ 50 million and also donated funds to finance a feasibility study for the proposal. Germany is mainly interested in the proposal due to the push of the German Green Party and due to their belief in the comprehensiveness of the projects. Also other stakeholders such as the UNDP, UNESCO and IUCN support the initiative. Many international stakeholders believe it is a radical, but important initiative within the climate change negotiations as a post-petroleum time should be the ultimate aim of a climate change treaty. Moreover, heads of international organisations such as the UNDP stated that this initiative is the most inspiring and important initiative they ever worked on.

So far, some international stakeholders have commented or consulted the team working on the Yasuni-ITT Initiative, such as Silvestrum, a consultant organisation of The Netherlands, and Climate Focus, specialised on nature and climate change projects (Silvestrum, 2009; Streck et al., 2009). Silvestrum and Climate Focus contain different ideas about the possibility of including the petroleum aspect in the initiative. Sivestrum states that the initiative should be incorporated within CDM, and

Climate Focus suggests that it should be incorporated within REDD as it indeed also draws upon deforestation and degradation. However, the Yasuni-ITT Initiative team argues that the specialty of the initiative is that it includes leaving petroleum underground, and thus aims at a post-petroleum economy, which is not included in REDD. In addition, due to the many critiques upon CDM, described in chapter 4, the team argues that the proposal should not be included in the mechanism. Nevertheless, all comments are taken into account. In addition, through attending and promoting the initiative at international conferences such as a COP of the UNFCCC, many international stakeholders commented on the proposal and these comments are taken up by the Yasuni-ITT team. Thus, participation of the international stakeholders is apparent (Silvestrum, 2009; Streck et al., 2009; Y. Kakabadse, personal communication, June 14, 2009; U. Kozcy, personal communication, August 10, 2009).

6.6 Equity related issues and challenges

Davy's arguments for equity

In general, the Yasuni-ITT Initiative may be based on the argument for equity in relation to the „poor" and the „most", being Ecuador as a country, a middle income country, indigenous groups, poor people and other minorities. This in the sense that the project aims at protecting and empowering these different groups. Also the „elite" argument for equity is used since developed countries can obtain CGYs by investing in Yasuni-ITT. Furthermore, others, being „elite", „most" or „poor", can contribute to the international fund as well, and thus, the initiative shows all three arguments for equity.

Procedural equity

The Yasuni-ITT Initiative addresses national and international procedural equity to a minor extent as it includes some participation and considers the interests of different stakeholders within the development of the proposal. However, nationally, there is hardly any participation by indigenous peoples, the market and others. Perfect (national and international) procedural equity is addressed to some extent as the outcome of the initiatives" procedures may be fair since the interests of different national and international stakeholders are taken into account. For instance, indigenous peoples" interests are taken into account, although they are not part of the Yasuni-ITT development team. Furthermore, imperfect procedural equity may be addressed to some extent since the proposal aims to guarantee fair outcomes for the „poor", the „most" and the „elite", nationally and internationally, by aiming at protecting indigenous peoples, future generations, the „poor" and the „most" in Ecuador, as well as developed countries and people who can contribute to the fund. Furthermore, the methods which will be used for deciding upon projects may guarantee a fair outcome since different national and international interests, particularly those of the „poor", are taken into account and the steering committee may include different stakeholders of different classes. However, the current methods used do not address procedural equity since many actors are not actively participating within the development of the proposal. Pure procedural equity is not completely addressed since the influence of procedures with regards to the development of the initiative has not been purely equal due to the minor, or no participation and consultation of indigenous peoples, local groups, NGOs and market players. As seen in the previous sections, the technical team of the initiative have their reasons for the non-inclusion of participation of certain groups. Although, these reasons may be seen as in contrast to the rights indigenous peoples have on the national and international level to participate and be consulted with regards to projects in their territories, which can be seen as some sort of procedural equity arguments. As such, the Ecuadorian government is even compelled to consult and let indigenous participate with developing projects in indigenous territories, and as such, these stakeholders will be part of the steering committee and participate with the implementing the projects. Yet, some of the stakeholders of the initiative, such as Alberto Acosta, believe that the Yasuni-ITT team needs to be familiar with what the ideas and arguments of the „poor" are, as the initiative also aims at being an institutional, procedural process of change and thus, participation of different groups is important, also due to the national and international rights these peoples already contain in relation to procedural participation (see section 6.2.3). One can conclude that due to these inconsistencies, procedural equity of the initiative remain weak.

With regards to international procedural equity, it is imperative to mention that Ecuador actively participates within the international climate change regime and negotiations through promoting the initiative, which can lead to more participation, empowerment and equality of the country within international negotiations. This might even increase the participation and empowerment of the South in general (countries, poor people and/or minorities). Even so, the international community, countries, NGOs, citizens among others, are particularly addressed to *co-operate* with the initiative, and not only to *contribute* financially (Acosta, 2009; Martinez-Alier & Temper, 2007).

Distributive equity

National and international distributive equity may be addressed through the initiative as the proposal not only addresses to a small extent procedural equity, but also since the „poor", the „most" and the „elite" may benefit from the initiative. Nationally, distributive equity may be addressed, since through the initiative's projects, the national „poor" and „most" benefit. Furthermore, the proposal may address national distributive equity since the aim of the project is not only to protect indigenous peoples' cultures, rights and their environment, but also to reduce national poverty. The non-contacted indigenous groups living in Yasuni may truly have the opportunity to be protected and live without being disturbed by the outside world. Contacted indigenous groups together with urban, rural and local (contacted) populations may well benefit from being able to implement and participate with the steering committee and the different projects. Additionally, as the market invests in the SD projects, it may create more jobs which may increase financial flows and reduce poverty even more in the country.
Internationally, distributive equity may be addressed as the international „poor" and „most" may benefit in the sense that Ecuador and other developing countries can implement the initiative. In addition, the international „elite" may benefit from the proposal in the sense that „elite" countries benefit by investing in the fund and earning CGYs.

The initiative can lead to international environmental equity in terms of social-environmental North-South relations and international rich-poor distribution since Ecuador would be able to develop more sustainably through the contribution of different countries, particularly developed countries. Besides, the national and international community, mainly the „elite", is being called upon to support Ecuador to accomplish the goal of SD, based on the premise that the North would have an „ecological debt" to Ecuador: the North extracted many natural resources, including fossil fuels, without leaving a considerable amount of valuable benefits to Ecuador. Therefore, the initiative aims (indirectly) at reducing peripheralization in Ecuador: the allocation of LULUs in Ecuador and bad environmental practices of transnational corporations. Instead, with the initiative, PIMBYs may be implemented in the country such as renewable energy and forestation projects through either national or international (transnational) businesses. As such, environmental racism may be addressed and/or be eliminated. Furthermore, not only since different projects regarding poverty, health, energy and education can increase in the developing countries' marginalized areas with people of certain race and/or colour, but also as the initiative clearly defines that Human and Indigenous Rights should be protected (EJ principle 10). Moreover, the projects may even increase the distribution of power more equally between the national and international government(s), the market and the civil society as Ecuador will be developing within the most important framework of this time: sustainable development.

The Yasuni-ITT initiative may also address national and international environmental equity when referring to *all species* since it may protect and preserve biodiversity in Yasuni and 40 other natural areas of Ecuador. Besides, there is an international human value of the preservation of these areas since the Amazon, and particularly Yasuni, hosts the greatest amounts of species, which is important medicine and genetic information.

Finally, the Yasuni-ITT Initiative may also address national and international intergenerational equity not only since it strives to combat climate change, but also as it may preserve biodiversity, protect indigenous rights and increase the use of sustainable energy sources on long term basis, thereby including different generations of all living beings on earth. Additionally, intergenerational equity may increase since additionality and leakage may be addressed with the initiative, which augments the short and long term, global GHG emission reductions (Acosta, 2009; Martinez-Alier& Temper, 2007).

Climate equity

As the Yasuni-ITT Initiative proposes new binding reductions for megadiverse developing countries with fossil fuel reserves, it points to the *sovereignty and comparability approach* of the equality principle by stating that not only developed countries need to act upon lowering their GHG emissions, but also developing countries. In other words, the initiative states that equality rights regarding GHGs count for all countries and it takes current emission levels as the status quo, based on the notion of historic entitlements and the historic „ecological debt" of developed countries. These approaches may be shown in the sense that Ecuador, as a developing country, will lower their GHG emissions and even GHGs in the atmosphere by keeping petroleum underground and implementing different forest and sustainable energy projects. In addition, the „ecological debt" may be revealed in the sense that the contributions for the fund are based on the GDP rate of countries where the „elite" countries, those with the higher „ecological debt" are requested to contribute the most.

The initiative is mostly based on both approaches of the *responsibility principle:* the Polluter Pays Principle (PPP) and the Benefit Principle (BP). The Yasuni-ITT initiative may use the PPP and the ´ecological debt´ aspect since the international community, mostly developed countries, are called upon to contribute and cooperate with the initiative. Therefore, it may address equity in the same way as the CDM since they both argue that all countries have the same obligation to address global climate change in accordance with the Common But Differentiated Responsibilities (CBDR), and they both hold more responsibility for major polluters. However, in contrast to the CDM, the Yasuni-ITT Initiative holds that the responsibilities of the „elite" countries are based on GDP rate and not on historic or current emissions. Furthermore, the Yasuni-ITT team states that everyone can participate with this proposal: also global citizens. The BP may be taken into account with the initiative since Ecuador believes that it should benefit not only financially, but also through projects for achieving SD and by leaving the petroleum underground in ITT. As such, the country adopts a pro-active approach with which they can observe direct benefits of their climate change mitigation efforts.

The initiative may aim at addressing the *capacity principle,* with all its approaches since those with more capacity to address climate change, Annex I countries, citizens and others, are called upon to contribute more to the international fund than others with less capacity. Yet, if those with less capacity would like to contribute more, they may do so. Furthermore, *economic situation and resource availability* is taken into account with the proposal since Annex I countries have better access to technologies, institutional capacity, and financial and human capital which are necessary for climate change mitigation and funding. Additionally, it may be that the „elite" countries share technologies through the implementation of renewable energy projects to improve the situation in Ecuador. The country requests for financial support from the international community as it does not have the economic resources to implement such techniques. Furthermore, domestic constraints can be a problem for Ecuador. Therefore, the initiative aims at addressing domestic constraints approach in the sense that participation of stakeholders may increase, democracy will be established better, and poverty and inequity may be reduced (U. Koczy, personal communication; Y. Kakabadse, personal communication, June 14, 2009).

Although Ecuador argues that poverty eradication and meeting *basic needs* of their citizens is a priority, the initiative does not consider these aspects to be given priority *over* addressing climate change. Instead, the country believes that these aspects are interrelated: one cannot address basic needs and poverty, but leaving climate change problems un-raised since they influence each other. Even so, SD also addresses poverty, economic development and basic needs of citizens. As such, the country aims through the initiative to break down all these problems through SD projects, forestation, combating poverty and inequity, water issues and more. In addition, the question of good governance, corruption and other problems, often apparent in developing countries, may be addressed through the initiative since the steering committee will decide over the projects and the funds with the consultation of different stakeholders.

The proposal may also aim at addressing the *opportunities approach* since attention is given to how many opportunities and possibilities Ecuador has to transform its economy into an energy efficient one in a cost-effective manner. Indeed, the proposal can address the opportunities approach since the „elite" make cost-effective reductions in their own countries *and* they can invest in SD

projects in Ecuador for which they receive warranty‟s (CGYs). Moreover, the problems of the opportunities approach may be resolved since Ecuador takes into account that it has a better opportunity *now* to transform its economy to a more energy-efficient one, rather than remaining dependent upon carbon intensive sectors. With the Yasuni-ITT Initiative, the question of who should pay for the emissions of export goods is somehow requited as the Annex I countries, who export and extract the petroleum in Ecuador, are requested to donate to the international fund to support Ecuador in transforming its economy in a more sustainable one.

Finally, the initiative takes into account several critiques of climate equity approaches since it admits that everyone is a polluter, although to differing extents; GHG emissions are hard to measure; and climate change is a continuous problem which needs to be resolved globally with all kinds of stakeholders and polluters and not just by a couple of major polluters, i.e. Annex I countries (Acosta et al., 2009; Heyward, 2007; J. Vogel, personal communication, August 6, 2009).

6.7 Conclusion; an alternative equity mechanism?

This final section answers the two main questions of this research, namely:

1. *To what extent, and based on which motivations, does the Yasuni-ITT Initiative address not only national and international environmental and climate equity, but also power imbalances?*

2. *Can the Yasuni-ITT Initiative be perceived as an alternative pilot project addressing procedural and distributive national and international environmental and climate equity?*

The previous chapters mainly outlined the international and national motivations on which the Yasuni-ITT Initiative is based on. It became apparent that existing and proposed climate change mechanisms contain certain problems and strengths. Although such mechanisms address in different manners environmental and climate equity, most of the mechanisms have difficulties to address these equity aspects comprehensively.

Chapter five examined the national motivations of the Yasuni-ITT Initiative. That chapter concluded that Ecuador‟s historical and current developments have not been positive in relation to political, economic, social and environmental factors. The country has dealt with many internal problems related to power imbalances and inequity (especially vis-à-vis indigenous peoples). In addition, Ecuador faces many negative impacts in the Amazon, including Yasuni, due to its extraction based economy. These developments point to the process of peripheralization with which environmental damaging industries are located in Ecuador‟s marginalized areas. In addition to these national and international motivations, lies the fact that global climate change, biodiversity loss, inequity, and poverty increase, mainly in developing countries such as Ecuador. Ecuador aims at combating all these issues with its new constitution and with different projects; however, it lacks the financial and institutional capacity to do so. Therefore, Ecuador proposed to implement the Yasuni-ITT Initiative.

Chapter six explored whether the Yasuni-ITT Initiative addresses not only national and international environmental and climate equity, but also power imbalances. Thus, it examined the other part of the first main question and the second main question. Through this chapter it became apparent that the initiative itself does not explicitly use equity arguments, nor is it particularly based on certain equity aspects. However, it may be that the initiative aims at including all three arguments for equity of Davy related to the „poor‟, the „most‟ and the „elite‟ in differing manners, as noted in the previous section.

Many issues related to procedural equity, especially with regards to current methods, are not addressed with an equal amount of participation of the different stakeholders. It may even be said that the different stakeholders are ordered in a kind of ladder of participation where the government has the most, and indigenous peoples, NGOs and the market the least influence. In addition, when promoting the initiative, nationally, discourses are used in relation to nature, renewable energy, poverty reduction and indigenous peoples protection. Globally, discourses in relation to climate change, deforestation and biodiversity are used to promote the initiative. This suggests that there are different levels to play at, with different partners and discourses. Still, the minor amount of participation of the indigenous

peoples influences the procedural equity aspects of the initiative negatively. Hence, in terms of addressing procedural equity, the initiative cannot yet be perceived as an alternative pilot project. However, the participation might increase in the future by including different stakeholders within a steering committee which will decide upon the allocation of the funds. Furthermore, interests of different stakeholders are currently taken into account, also from those who did not participate with the initial development of the proposal. Still, with procedural equity it is important that also the methods currently in use are equal and that different stakeholders are able to participate. The latter remains insufficient with the Yasuni-ITT Initiative which may be problematic on the long run as indigenous peoples feel left out and as the relationship between certain indigenous peoples and the government is already unstable.

Despite the critiques upon procedural equity, the Yasuni-ITT Initiative tend to address many aspects of distributive, environmental and climate equity, as well as peripheralization and environmental racism. Even all species- and intergenerational equity may be addressed. This is probably since the initiative comprehensively aims at solving different international, national and local problems regarding climate change, biodiversity, indigenous peoples‟ rights, poverty, inequity energy insecurity, biodiversity loss and deforestation. In addition, Ecuador is the first country aiming at leaving petroleum underground and hence, it aims at *not* emitting GHGs at all. These aspects remain the strengths of the proposal in contrast to other existing and proposed climate change mechanisms. Therefore, the value of the proposal may be much higher than other existing and proposed climate change mechanisms not only in relation to environmental and climate equity, but also with regards to additionality and leakage. Due to these powerful aspects of the initiative, Ecuador may (incidentally) address distributive environmental and climate equity (nationally and internationally), as well as power imbalances. As such, the Yasuni-ITT Initiative indeed can be perceived as an alternative pilot project which addresses differently, and may be more completely, distributive environmental and climate equity. Ecuador‟s international position and power may even increase through the strengths of the Yasuni-ITT Initiative. However, the latter remains to be seen and may depend on how the Yasuni-ITT team uses the initiative to put Ecuador forward.

Epilogue

This epilogue shortly reflects on the theories, methodology and methods used with this research.

Reflection on theory

Although this research aimed at integrating different theories comprehensively, the evaluation criteria can be criticized. First of all, one could criticize the combination of the theories used. In addition, some aspects of the theories are left out and even some philosophical background information related to equity and critical theory have not been examined. This could have had a certain influence on the empirical research and evaluation, although one would never know what and how.

The criteria used to evaluate mechanisms could also be criticized since although the research aimed to be comprehensive, this has not been as accurate as whished for due to time constraints and the aim of a master thesis itself.

Reflection on methodology and methods

The evaluations of the different mechanisms differ in the sense that the evaluations of the mechanisms in chapter four were mainly based on knowledge sources (existing literature), whereas the evaluation of the Yasuni-ITT Initiative was based on different data and knowledge sources (literature, observation, interviews, media). Thus, the value of the evaluations may be seen as unequal. However, as such, the research aimed not at really comparing the mechanisms, but more at using the different climate change mechanisms and their critiques as motivations for the Yasuni-ITT Initiative.

As this research unfolded itself, it became apparent that my position changed as a researcher. This in the sense that I became more involved in the development of the initiative not only by conducting research and writing it, but also by promoting it. As such, one could argue that my position as an active campaigner for the initiative influences the objectivity of my own masters‟ thesis. However, I tried to take an objective and critical stand in this issue during and after the whole research process. The objectivity came apparent as I noted that the initiative includes a certain lack of procedural equity. By being familiar with this problem and by being actively involved with the initiative and its team, I aimed at underlying and transforming this issue through dialectical dialogues, as a critical theoretic researcher befits.

The different existing and proposed climate mechanisms are currently being negotiated, developed, and implemented, especially previous to. It has been difficult to keep track with all the changes made related to the different mechanisms. Therefore, I choose to mainly concentrate on the data previous to the climate change negotiations in Copenhagen. This also counted for the Yasuni-ITT Initiative as the initiative unfolded itself during the last couple of months. For instance, procedural aspects are being developed by setting up the steering committee with indigenous peoples and other stakeholders and the contract with the UNDP for the trust fund is being negotiated. Yet, being objective, as there still remain problems between the government and certain indigenous peoples‟ groups, it is difficult to tell where the initiative will lead to. As such, I am very concerned about this issue, also in relation to the actual implementation and success of the project. Hence, I remain trying to be involved with promoting the initiative.

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Appendix

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Appendix I: Interview guide

Power positions of Ecuador and South – America (SA)

- What was the previous position of SA in the world, with political, economic, environmental and social aspects?
- What is the current position of SA in the world, and how do you see this developing with political, economic, environmental and social aspects?
- What was the previous position of Ecuador in the world, in relation to political, economic, environmental and social aspects?
- What is the position of Ecuador in relation to the world as a developing country with political, economic, environmental and social aspects taken in mind?

Rights:

- The park is an UNESCO area, which you are obliged to protect, and the indigenous peoples have protection rights as well. So it is strange to make a proposal to not to extract oil and to protect the park, even though you have to protect the area. I was wondering what your view on that is.
- Thus, why isn‟t the state of Ecuador protecting the area itself instead of asking for compensations?

International environmental equity aspects of Ecuador

- How do you define (international) environmental equity? And Equity? And for Ecuador?
- What is the historical position in terms of international environmental equity of Ecuador?
- What is the current position in terms of international environmental/climate equity of Ecuador?

Power relations Ecuador

- How do power relations work in Ecuador and how are they distributed between government, civil society and market?
- How was it before?
- What is the international power/influence position of Ecuador in relation to economic, social, environmental and economic aspects?
- Are power relations changing (or stabilizing) with the Yasuni-ITT Initiative?
- How does it work with the Yasuni-ITT Initiative? Which ministries are involved. Which stakeholders are harder to convince to support the initiative and why?

ITT: aspects and transformation of climate equity

- What are the environmental, social, political and economical components of the Yasuni-ITT Initiative?
- What are the climate/environmental equity components of the Yasuni-ITT Initiative?
- Is the Yasuni-ITT Initiative a way to change the social, political, economical and environmental conditions of Ecuador nationally and internationally?
- How shall the international climate/environmental equity position of Ecuador transform/shift with the Yasuni-ITT Initiative? Also in relation to social, economic and political aspect.
- Do you think the Yasuni-ITT Initiative is a way to enhance climate/environmental equity nationally and internationally? Why?

- Is the Yasuni-ITT Initiative a way to change internationally, economic, social, political and environmental conditions of developing countries?
- Is the Yasuni-ITT Initiative a way to change/equalize power distributions between developed and developing countries? As in, that developing countries are more powerful than before?

CDM, REDD, Yasuni-ITT Initiative and equity

CDM

- Is CDM a way to enhance climate equity and why?
- Is CDM a way to change internationally, economic, social, political and environmental conditions of developing countries?
- Is CDM a way to equalize the economic, social, political and environmental conditions between developed and developing countries?
- Is CDM a way to change power distributions between developed and developing countries? As in, that developing countries are more powerful than before?

REDD

- Is REDD a way to enhance climate/environmental equity and why?
- Is REDD a way to change internationally, economic, social, political and environmental conditions of developing countries?
- Is REDD a way to equalize the economic, social, political and environmental conditions between developed and developing countries?
- Is REDD a way to change power distributions between developed and developing countries? As in, that developing countries are more powerful than before?

Yasuni-ITT Initiative, REDD and CDM

- Is the Yasuni-ITT Initiative a better way to enhance climate equity compared to REDD and CDM? Why?
- Is the Yasuni-ITT Initiative a new alternative pilot project, compared to CDM and REDD, to enhance climate equity?/ to transform/change economic, social, political and environmental conditions for the better?
- Is the Yasuni-ITT Initiative a better way to change internationally, economic, social, political and environmental conditions of developing countries compared to REDD and CDM?
- Is Yasuni-ITT Initiative a better way to equalize the economic, social, political and environmental conditions between developed and developing countries compared to REDD and CDM?
- Is Yasuni-ITT Initiative a better way to change power distributions between developed and developing countries? As in, that developing countries are more powerful than before? Compared to CDM and REDD?
- Should the Yasuni-ITT Initiative proposal be next to CDM, REDD and other or instead of?

Other projects? Brazil, Saudia Arabia, Bolivia?

- Is ??? a way to enhance climate equity and why?
- Is ??? a way to change internationally, economic, social, political and environmental conditions of developing countries?
- Is ??? a way to equalize the economic, social, political and environmental conditions between developed and developing countries?

- Is ??? a way to change power distributions between developed and developing countries? As in, that developing countries are more powerful than before?

What is so special about the Yasuní park?

- What is special about this park?
- What is the value of biodiversity?
- Of emission reductions of CO2?
- What are the problems the park is facing in social, economic, environmental and political terms? And by whom, what and how are the problems created?

Stakeholders input and output:

Indigenous (combined with questions about Yasuni-ITT proposal)

- How do indigenous people look at the current situation of the Yasuní NP and their living space?
- How do indigenous people look at the Yasuni-ITT Initiative?
- In what way were they able to contribute to the Yasuni-ITT Initiative?
- Do they think the Yasuni-ITT Initiative is dealing with their rights, environmental issues, and other problems in the park and their environment?
- Do they agree with the financial compensation to protect the park with the Yasuni-ITT Initiative, or do they see their environment rather be protected by the state?
- Do they see the Yasuni-ITT Initiative as a way to enhance environmental/climate equity for them?
- Do they see it as a way to enhance climate equity in an alternative way to CDM and REDD?

NGO's (combined with questions about Yasuni-ITT proposal)

- How do NGO's, of Ecuador and international, see the Yasuni-ITT Initiative?
- In what way were they able to contribute to the Yasuni-ITT Initiative?
- Do they agree with the compensation instead of applying rights?
- Can it enhance international climate equity?
- Do they see it as a way to enhance climate equity in an alternative way to CDM and REDD?

International stakeholders: (combined with questions about Yasuni-ITT Initiative)

- How does the international community see the Yasuni-ITT Initiative?
- What do you think of the Yasuni-ITT Initiative?
- Do you think it is a way to enhance international climate/environmental equity?
- Do they see it as a way to enhance international climate/environmental equity (or equity) in an alternative way to CDM and REDD?
- How does Germany, Norway, Spain (as in Martinez-Alier) see the proposal? Enhancing Climate equity? And alternative/next to/pilot project in contrast to CDM and REDD?

Appendix IIa: List of CDM host countries

Country	Number Of Projects
Argentina	16
Armenia	5
Bangladesh	2
Bhutan	1
Bolivia	3
Brazil	165
Cambodia	4
Chile	36
China	702
Colombia	20
Costa Rica	6
Cuba	2
Cyprus	5
Côte d`Ivoire	1
Dominican Republic	1
Ecuador	13
Egypt	4
El Salvador	5
Fiji	1
Georgia	2
Guatemala	11
Guyana	1
Honduras	15
India	475
Indonesia	42
Iran (Islamic Republic of)	1
Israel	16
Jamaica	1
Jordan	1
Kenya	1

Country	Number Of Projects
Lao People's Democratic Republic	1
Malaysia	78
Mexico	120
Mongolia	3
Morocco	5
Nepal	2
Nicaragua	4
Nigeria	3
Pakistan	4
Panama	6
Papua New Guinea	1
Paraguay	1
Peru	21
Philippines	40
Qatar	1
Republic of Korea	35
Republic of Moldova	4
Singapore	1
South Africa	17
Sri Lanka	6
Syrian Arab Republic	2
Thailand	29
Tunisia	2
Uganda	2
United Arab Emirates	4
United Republic of Tanzania	1
Uruguay	3
Uzbekistan	7
Viet Nam	15

Source: UNFCCC, December 2009.

Appendix IIb: List of CDM by investor countries

Country	Number Of Projects
Austria	43
Belgium	20
Brazil	1
Canada	44
Denmark	39
Finland	30
France	43
Germany	135
Ireland	1
Italy	45
Japan	272
Luxembourg	15
Netherlands	284
Norway	28
Portugal	1
Spain	68
Sweden	151
Switzerland	486
United Kingdom of Great Britain and Northern Ireland	668

Source: UNFCCC, December 2009.

Appendix III: Shrub and tree species in Yasuni

Comparison of shrub and tree species richness in Center for Tropical Forest Science (CTFS)

Site	*Country*	*Tree Spp. (≥ 1 cm DBH, Mean/ha)*	*Tree Spp. (≥ 10 cm DBH, Mean/ha)*	*Tree Spp. (≥ 1 cm DBH, Total)*	*Total Census Area (ha.)*
Yasuní National Park	Ecuador	655	251	1,104	25
Lambir Hills National Park	Malaysia	618	247	1,182	52
Pasoh Forest Reserve	Malaysia	495	206	816	50
Khao Chong Wildlife Refuge	Thailand	–	–	612	24
Yunnan Province (Xishuangbanna)	China	–	–	468	20
Bukit Timah Nature Reserve	Singapore	276	113	329	2
Korup National Park	Cameroon	236	87	494	50
Palanan Wilderness Area	Philippines	197	100	335	16
Okapi Faunal Reserve (Ituri)	D. R. of Congo	159	52.5	445	40
Barro Colorado Island	Panama	169	91	301	50
La Planada Nature Reserve	Colombia	154	88	228	25
Sinharaja World Heritage Site	Sri Lanka	142	72	205	25
Doi Inthanon National Park	Thailand	104.9	66.6	162	15
Ken-Ting National Park	Taiwan	104	61	125	3
Huai Kha Khaeng W. Sanctuary	Thailand	96	65	251	50
Luquillo Experimental Forest	Puerto Rico	73.3	42.1	138	16
Northern Taiwan (Fushan)	Taiwan	–	–	110	25
Mudumalai Wildlife Sanctuary	India	24.7	19.8	71	50

Data for this table obtained from Losos and Leigh Jr. and CTFS website (http://www.ctfs.si.edu/site)
Source: Bass et al.,p. 27.

Appendix IV: List of supporters Yasuni-ITT

Name	Note/Country
Danielle Mitterrand	President of the France Libertés Foundation, France
Desmund Tutu	Nobel peace prize 1984, clerk, South Africa
Felipe González	Ex president Spain
Fernando Henrique Cardoso	Ex president Brazil
Jody Williams	Nobel peace prize 1997, teacher and aid worker, USA
Mikhail Gorbachev	Ex president USSR
Mohammad Yunus	Nobel peace prize 2006, economist and banker, Bangladesh
Prince Charles	Great Brittain
Ricardo Lagos	Ex president Chili
Rigoberta Menchú	Nobel peace prize 1992, indigenous rights, Guatamala
Rita Levi Montalcini	Nobel Laureate in Physiology and Medicine 1986, neurologist, Italy
Vandana Shiva	The Right Livelihood Award 1993, environmental activist and physicist, India

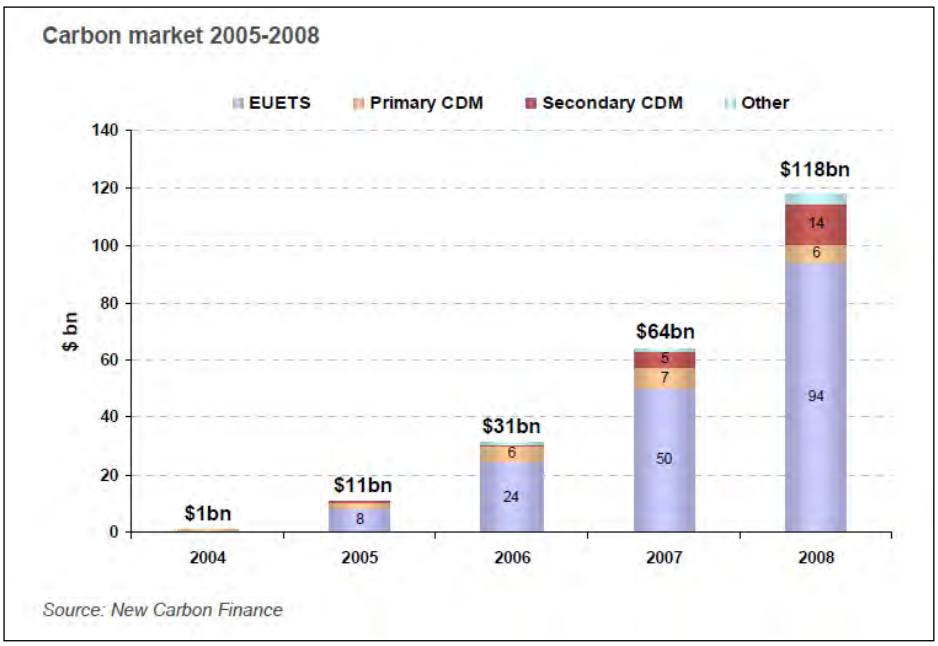
Organisation	Note/Country
Accion Ecologica	Ecuador
Amazon Watch	Ecuador
Andean Development Corporation (CAF)	Latin America
Andean Community of Nations (CAN)	Latin America
Confederation of Indigenous Nations of Ecuador (CONAIE) e.a. indigenous groups	Ecuador
European Union (EU)	EU
International Union for Conservation of Nature and Natural Resources (IUCN)	World
Oilwatch	World
Organisation of Petroleum Exporting Countries (OPEC)	World
Organization of American States (OAS)	Latin America
Parliaments of EU countries	EU
United Nations Development Programme (UNDP)	UN
United Nations Educational, Scientific and Cultural Programme (UNESCO)	UN
United Nations Environmental Programe (UNEP)	UN
World Resource Institute (WRI)	World

Source: Larrea et al., 2009.

Appendix IV: The European Carbon Market; EU ETS

The European Union is leading the way (in May 2009) in reducing GHG emissions with its goals to reduce emissions by 2012 with 5.2% below 1990 levels, with 20% by 2020 and with 50% by 2050, which goes beyond the Kyoto Protocol targets. These goals can be reinforced with the participation of developing countries in a scheme of shared but differentiated responsibilities. To meet their objectives, the European Union has set up the European Union Emissions Trading Scheme (EU ETS). With the EU ETS, companies who do not surpass their emission reduction targets are allowed to sell emission permits (EUA) to companies who surpass their emission targets. Next to that, the EU ETS is using CDM to reduce national emissions. The Certified Emission Reductions (CERs) that come from the CDM will probably be sold at prices slightly lower than the EUA (as of May 2009). The EU ETS market has increased significantly and it represents 70% of the global market in 2009. The value of one metric tonne of CO_2 has fluctuated between 12 and 30 Euros since 2006 till 2009 and the volume sold reached 4 giga tonnes in 2008 (around US$118 billion, almost four times the value of 2006). Although, prices and the volumes of CO_2 are quite low in the voluntary market, in 2008 the average price per tonne of CO_2 in the ETS market was US$ 32.5, which will probably decrease with the global market and oil crisis (Larrea et al., 2009)

Figure Appendix V: The carbon market 2005 – 2008



Source: Larrea et al., 2009.

Appendix V: Main expected contributions by countries for Yasuni-ITT

Country	2005 GDP (Billion US $)	Per capita GDP (US $)	Share GDP (%)	Total contribution (million US dollars)	Annual contribution
United States	12417	41890	36.98	2658.2	204.48
Japan	4534	35484	13.50	970.7	74.67
Germany	2795	33890	8.32	598.4	46.03
United Kingdom	2199	36509	6.55	470.7	36.21
France	2127	34936	6.33	455.3	35.02
Italy	1763	30073	5.25	377.3	29.03
Spain	1125	25914	3.35	240.8	18.52
Canada	1114	34484	3.32	238.5	18.34
Russian Federation	764	5336	2.27	163.5	12.58
Australia	733	36032	2.18	156.8	12.06
Netherlands	624	38248	1.86	133.6	10.28
Belgium	371	35389	1.10	79.4	6.11
Switzerland	367	49351	1.09	78.6	6.04
Sweden	358	39637	1.07	76.6	5.89
Austria	306	37175	0.91	65.5	5.04
Poland	303	7945	0.90	64.9	4.99
Norway	296	63918	0.88	63.3	4.87
Denmark	259	47769	0.77	55.4	4.26
Greece	225	20282	0.67	48.2	3.71
Ireland	202	48524	0.60	43.2	3.32
Finland	193	36820	0.58	41.4	3.18
Portugal	183	17376	0.55	39.2	3.02
Czech Republic	124	12152	0.37	26.6	2.05
Hungary	109	10830	0.33	23.4	1.80
Luxembourg	37	79851	0.11	7.8	0.60
Slovenia	34	17173	0.10	7.4	0.57
Iceland	16	53290	0.05	3.4	0.26
Total	**33575**		**100.00**	**7188.0**	**552.92**

Note: Some small Annex I countries are not included in the table.
Source: Larrea et al., 2009.