Local Stakeholder Consultations in the CDM Gold Standard

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Glossary

- **AAU** – Assigned Amount Unit (carbon credit unit expressing emission allowances under the Kyoto Protocol)
- **Annex B Parties** – Countries listed in Annex B of the Kyoto Protocol. This group has binding emission reduction targets.
- **Annex I Parties** – Countries listed in Annex I of the UNFCCC. This group can invest in JI and CDM projects (CDM projects can only be hosted by countries not listed in Annex I (known as, non-Annex I Parties)).
- **Carbon Credit** – Common term for a tradable unit usually representing one metric ton of carbon dioxide equivalent (tCO_2e) in a 100-year timeframe
- **CDM** – Clean Development Mechanism (project based carbon offset scheme established by the Kyoto Protocol).
- **CDM modalities and procedures** – The CDM operating regulations
- **CER** – Certified Emission Reduction (carbon credit unit generated by Clean Development Mechanism projects).
- **Carbon dioxide equivalent** – Standardized measurement for the global warming potential (GWP) of any given long lived greenhouse gas over a given timeframe. Because different gases have different life-times in the atmosphere, their GWP will vary over different timeframes; the Intergovernmental Panel on Climate Change uses calculations for 20, 100 and 500 years.
- **COP** – Conference of the Parties to the Convention (UNFCCC)
- **CMP (COP/MOP)** – Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol (this is the highest authority of the CDM)
- **DNA** – Designated National Authority
- **DOE** – Designated Operational Entity (firms accredited by the EB to serve as independent third-party project auditors throughout the CDM project cycle.
- **EB** – Executive board of the CDM.
- **ERU** – Emission Reduction Unit (carbon credit generated Joint Implementation projects).
- **JI** – Joint Implementation (project based carbon offset scheme established by the Kyoto Protocol).
- **Letter of approval** –
- **LSC** – local stakeholder consultations.
- **SD matrix** – result of the detailed impact assessment (carried out by the project developer during the Gold Standard registration process, assesses the project impact across 12 sustainable development indicators).
- **SD matrix (blind)** – result of the blind sustainability exercise (carried out during the Local Stakeholder Consultations for Gold Standard projects).
- **SD matrix (consolidated)** – Final version of the Sustainable Development Matrix.
- **UNFCCC** – United Nations Framework Convention on Climate Change
- **SRM** – stakeholder relations management

Chapter 1: Introduction

The purpose of this thesis is to assess if the local stakeholder consultations conducted during the Gold Standard registration process for clean development mechanism projects, result in discernible changes to the project designs, particularly in terms of increased sustainable development benefits. This chapter introduces the clean development mechanism (CDM) and the Gold Standard, and presents the thesis' research design and research question.

1.1: Introducing the Clean Development Mechanism and the CDM Gold Standard

In 1994, the United Nations Framework Convention on Climate Change (UNFCCC) enters into force, its ultimate objective is to stabilize greenhouse gas (GHG) concentrations "at a level that would prevent dangerous anthropogenic (human induced) interference with the climate system" (United Nations, 1992).[1] The UNFCCC is considered instrumental in that it is the first major international agreement to—despite the lack of conclusive scientific evidence available at the time—formally recognize that climate change poses a problem, and bind its member states to "act in the interest of human safety even in the face of scientific uncertainty." Another key principle of the convention is that of "common but differentiated responsibilities", which recognizes that industrialized countries—as the source of most past and current GHG emissions—must accept a greater responsibility for reducing emissions; compared to developing countries whose share of global emissions are expected grow, as they attempt to meet their social and economic development needs. (Introduction to the Convention, n.d.).

In itself the UNFCCC only encourages member countries to reduce GHG emissions, however with the adaptation (1997) and subsequent entry into force (2005) of the Kyoto Protocol; the principles of the convention became operationalized by the inclusion of binding emission reduction targets for 37 industrialized countries and the European community. These countries are referred to as Annex B Parties, and their reduction targets are expressed as levels of allowed emissions, known as assigned amounts.[2] (Kyoto Protocol, n.d.).

In addition to national measures, the Kyoto Protocol also introduced three market-based mechanisms as alternative means for Annex B Parties to meet their reduction targets. The Kyoto mechanisms are *Emissions Trading*, the *Clean Development Mechanism*, and *Joint Implementation* (JI). Emissions Trading allow an Annex B party with excess emission

[1] For more on what constitutes dangerous anthropogenic interference with the climate system, see chapter 3, section 3.1.

[2] The specific emission allowances for each Annex B Party is expressed as a percentage of the total GHG emissions in the Party's base year (1990 in most cases), and varies from -8 % to +10 %.

allowances (i.e. emissions permitted, but not "used") to sell these in the form of assigned amount units (AAUs)[3] to another Annex B Parties that have yet to meet its target.

JI and the CDM are project-based mechanisms designed to encourage the private sector and developing countries to contribute to emission reduction efforts. They work by allowing Annex I Parties[4] to invest in emission reduction projects in other Annex I Parties (JI projects), or non-Annex I Parties (CDM projects), which—to the extent that they result in additional and verifiable emission reductions—generate tradable carbon credits in the form of emission reduction units (ERUs)[3] and certified emission reductions (CERs)[3] respectively. The establishment of the Kyoto flexible mechanisms created what is commonly known as the carbon market. (Mechanisms under the Kyoto Protocol, n.d.).

The idea behind the carbon market is that from a technical perspective it is of limited importance where emission reductions are implemented, as long as total atmospheric GHG concentrations are stabilized at a safe level. With this in mind, the Kyoto mechanisms are intended to provide cost-effective alternatives to domestic measures for countries with Kyoto commitments; as well as stimulate sustainable development in developing countries through international technology transfers and green investments.

1.1.1: The Purpose and Structure of the Clean Development Mechanism

The CDM specifically is designed to serve the twin purpose of assisting developing countries in achieveing sustainable development, and assisting developed countries in complying with their Kyoto targets in a cost-effective way. This is clearly expressed in Article 12, paragraph 2, of the Kyoto Protocol which states that:

> *The purpose of the clean development mechanism shall be to assist Parties not included in Annex I in achieving sustainable development and in contributing to the ultimate objective of the Convention, and to assist Parties included in Annex I in achieving compliance with their quantified emission limitation and reduction commitments under Article 3.*

As mentioned above the mechanism works by allowing Annex I Parties to invest in emission reduction projects in non-Annex I Parties, however as this is primarily a market-based

[3] AAUs, ERUs and CERs are different tradable carbon credit units, each representing one metric ton of carbon dioxide equivalent (tCO_2e) in a 100-year timeframe.

[4] Annex I refers to the Parties listed in Annex I of the UNFCCC, while Annex B refers to the Parties listed in Annex B of the Kyoto Protocol. While it is the second group that has legally binding emission reduction obligations, it is the first group that can invest in JI/CDM projects as well as host JI projects, and it is non-Annex I Parties that can host CDM projects. With a few exceptions (most notably the United States) the two groups are almost identical, and in practice the two terms are used almost interchangeably. In a more practical sense Annex I Parties refer to developed countries and economies (the EEC), while non-Annex I parties refer to developing countries.

mechanism, the actors are only rarely the actual Parties themselves (i.e. developed and developing countries), but rather commercial, non-governmental or other legal entities within the Parties. And in order to insure that the mechanism performs in accordance with its objectives, comprehensive regulations have been developed in the form of the CDM modalities and procedures, as well as an extensive institutional framework to supervise the project registration process, as well as the verification and issuance of certified emission reductions (CERs).

A fundamental condition for the CDM to work as intended is the ability to ensure that the emission reductions delivered by the mechanism are not only verifiably real, but also additional to any reductions that would occur in the absence of the mechanism. This is particularly important because as a carbon offset scheme, the emission reductions generated by the CDM are being used to replace domestic reductions in Annex I countries. The consequence of this is that if more CERs are issued than emissions are reduced, the CDM will actually lead to an increase in total emissions (Paulsson, 2009, p. 67). For this reason, the CDM modalities and procedures details a registration and issuance process that is designed to ensure that carbon credits generated by the CDM correspond to "real, measurable and long term" emission reduction; and are the result of project activities that would not have taken place in the absence of the extra revenues generated by the sale of CDM certified carbon credits. This process consist of, among other things, ex-ante project validation and ex-post emission reduction verification, both carried out by independent reviewers known as designated operational entities (DOEs).[5]

The CDM modalities and procedures also include some provisions intended to ensure that project activities make contributions to the sustainable development of host countries. Reducing carbon emissions, thus contributing to a less carbon intensive economic development, is in itself a contribution to sustainable development. But in stating explicitly that the purpose of the CDM is to assist non-Annex I Parties in achieving sustainable development *and* in contributing to the ultimate objective of the convention (i.e. stabilizing GHG concentrations at a safe level); article 12 makes it clear that the CDM is intended to provide sustainable development benefits in non-Annex I Parties that goes beyond emission reductions. In order to ensure that this is the case, project developers applying for CDM registration must secure a *letter of approval* from the designated national authority (DNA) in

[5] For more on the CDM modalities and procedures, regulatory and supporting bodies, and the CDM project cycle, see chapter 4.

the host Party, affirming that the proposed project activity makes positive contributions to the sustainable development priorities of the host country. [6]

1.1.1.1: The CDM and Sustainable Development

Defining and assessing the sustainable development contributions of CDM projects are in other words the prerogative of the host country. The CDM modalities and procedures provides that each Party is required to establish a designated national authority in order to qualify for participation in CDM, but the role and operational details of the DNA is largely left to each Party to determine for itself. On the issue of contributions to sustainable development, it is entirely up to the individual designated national authorities to determine what will be required of proposed projects in order to obtain a letter of approval. Furthermore, once a project has been approved by the host country DNA, the issuance of carbon credits (CERs) are not dependent on any additional ex-post monitoring of the claimed contributions to sustainable development.

1.1.2: The CDM – State of Play

Since becoming operational in early 2006, the CDM has seen a relatively steady increase in participation, and as of April 2012 the number of registered CDM projects is just over 4000. In excess of 900 million CERs have already been issued, and by the end of the first commitment period (2008-2012) the CDM is expected to offset more 2,700 million tCO2e (CDM: CDM in Numbers, n.d.). By comparison, Norway's total assigned amount for the same period is ca. 250 million AAUs (UNFCCC Secretariat, 2007). In other words it is fair to say that the CDM makes a significant contribution to the international carbon market.

1.1.2.1: Is the CDM fulfilling its twin objectives

The performance and effectiveness of the CDM, particularly with regard to the question of whether or not the mechanism is fulfilling its twin objectives, has been the subject of extensive academic study and debate. A significant portion of this literature is reviewed in Paulsson (2009), and several key concerns are identified. Not surprisingly, given its importance for the environmental integrity of the CDM, issues regarding the methods used to ensure the additionality of CDM emission reductions have been heavily debated. The same is true for other issues surrounding the mechanism's environmental integrity and ability to generate cost-effective emission reductions. However as these issues are of limited relevance for this thesis, they will not be given any further attention here.

[6] The designated national authority is the body granted responsibility by a Party to authorize and approve participation in CDM projects.

Another topic which is given significant attention in the literature is the sustainable development contributions of the CDM, and the prevailing argument seems to be that "there is an inherent bias in the CDM towards promoting cost-effectiveness at the expense of sustainable development, since sustainable development has no monetary value in the mechanism" (Paulsson, 2009, p. 70). This issue has also been the specific subject of an extensive literature review. Olsen (2007) reviews close to 200 studies including both peer-reviewed articles and reports from the grey literature in an attempt to, "assess the state of knowledge on how the CDM contributes to sustainable development including poverty alleviation". The main finding of the review is that, "left to market forces, the CDM does not significantly contribute to sustainable development" (Olsen, 2007, p. 1). An important reason behind this conclusion is the lack of an "authoritative and universally accepted approach or methodology" for the "practical and concrete assessment of the sustainability impacts of CDM projects" (Olsen, 2007, p. 7). Another important concern is the high number of certified emission reductions being generated by a comparatively small number of projects involving end-of-pipe capture and decomposing of non-CO_2 GHG emissions from landfills and various industrial processes.[7] This is considered problematic as these types of projects are attractive purely from a low-cost emission reduction perspective, and widely recognized as having no direct development benefits (Olsen, 2007, p. 13).

The CDM modalities and procedures are the subject of continued development and refinement, and some of the issues above have to some extent been addressed. However, for the purpose of this thesis, these findings remain highly relevant as they point directly to the perceived shortcomings of the CDM as a catalyst for sustainable development, which in turn led to the establishment of the CDM Gold Standard.

1.1.3: The Gold Standard

The Gold Standard is a certification standard for carbon mitigation projects. It was conceived in 2001 by a group of NGOs led by the World Wildlife Fund (WWF), SouthSouthNorth (SSN) and Heilo International, which—having been present at the 2001, 7th session of UNFCCC Conference of the Parties (COP7), where the modalities and procedures for the CDM were being decided—were concerned that the CDM regulations would fall short of ensuring the successful implementation and fulfillment of the mechanism's twin objective. With this in

[7] GHGs such as N_2O, CH_4 and HFC-23 have a high global warming potential (GWP). E.g. HFC-23 has a GWP over a 100 year time horizon of 11.700, i.e. 1 ton of HFC-23 equals 11.700 tCO_2e. This in turn means that reducing HFC-23 emissions results in 11.700 carbon credits per ton HFC-23. (Global Warming Potentials, n.d.)

mind, the Gold Standard was conceived as a voluntary certification scheme that would certify carbon offset projects[8] to ensure that they "demonstrate real and permanent GHG reductions and sustainable development benefits in local communities that are measured, reported and verified." (Who we are | GSF, n.d.).

Following a two year consultation period, involving governments, NGOs, private sector actors and other stakeholders from over 40 countries, the first version of the Gold Standard Rules and Procedures was launched in 2003 with funding from the WWF and Basel Agency for Sustainable Energy (BASE). This was followed by the 2004 establishment of a secretariat to facilitate and support the standards adaptation and practical implementation. While initially hosted by BASE, the secretariat became an independent legal entity when the Gold Standard Foundation was established as a Swiss non-profit foundation in 2006. In August 2008, the Gold Standard rules and procedures received a major revision (GSv2.0) in order to make the approval process more transparent, as well as simplify the Rules and Procedures by introducing a single toolkit for use across all project types.

1.1.3.1: The Gold Standard Rules and Procedures

As of GSv2.0, the Gold Standard documentation consists of two main parts. The *Gold Standard Requirements* presents the fundamental principles and the rules of Gold Standard certification in a concise way. And the *Gold Standard Toolkit* describes the project cycle and provides examples and detailed instructions on the use of the Gold Standard. The Toolkit also includes fixed templates which are required for reporting information being passed between project proponents, validators, verifiers and the Gold Standard. Unlike the fundamental principles described in the GS requirements, the Toolkit is designed to accommodate continuous modifications and improvements. And in June 2009 the GSv2.1 was introduced in order to incorporate recent rule updates and market feedback. (Ecofys, TÜV-SÜD and FIELD, 2008; Ecofys, TÜV-SÜD and FIELD (requirements), 2009).

In more practical terms, the Gold Standard rules and procedures are essentially designed as a toolkit that guides project proponents through the development process with the purpose of ensuring that the project will qualify for Gold Standard certification. These include restrictions related to project type, requirements to demonstrate additionality, and a number of measures

[8] While initially conceived and developed for application with the Kyoto Mechanisms (CDM and JI), the Gold Standard have also supported non-UNFCCC emission reduction projects known as Voluntary Emission Reduction (VER) projects since 2006.

designed to ensure that the project contributes to sustainable development.[9] Finally, as a market-based instrument, the aim of the Gold Standard is to provide a monetary value for the sustainable development benefits. This is to be accomplished by a premium price mechanism where Gold Standard certified carbon credits are valued higher than "conventional" credits on the compliance and voluntary markets. (Ecofys, TÜV-SÜD and FIELD (requirements), 2009; Sterk, et al., 2009).

1.2: Theory

The paragraphs above have accounted for the clean development mechanism and its purpose, as well as how regulatory gaps have allowed for a situation where the mechanism's sustainable development objective is often overshadowed by its GHG emission reductions objective. The Gold Standard has also been introduced as a voluntary "best practice" certification scheme, with more stringent sustainable development standards. A key characteristic of the Gold Standard certification process is the reliance on stakeholder input to ensure that proposed projects contribute to sustainable development. This thesis aims to examine if, and how, the stakeholder input collected by Gold Standard CDM projects in fact lead to increased sustainability benefits.

For this purpose, the thesis relies on a theoretical framework designed to study the relationship between an enterprise and its stakeholders, particularly the extent to which this relationship can be managed in order to advance the normative content of a given concept, such as for example sustainable development. The thesis also relies on certain theoretical assumptions about the normative content of sustainable development.

1.3: A Brief Introduction to Stakeholder Relations Management in the CDM and the Gold Standard

In this thesis the term stakeholder relations management (SRM) refers to the practical measures and processes used to manage the relationship between organizations or corporations and their stakeholders. In the CDM and the Gold Standard, stakeholder relations management occurs across two distinct dimensions. First, stakeholders were, and continue to be heavily involved in the development and continued evolution of both the CDM, and to an even greater extent the Gold Standard. As this dimension falls outside the analytical scope of the thesis, it will not be examined further. The second dimension involves the requirement of project level stakeholder consultations during the design stage of clean development

[9] The Gold Standard registration, verification and issuance process will be described in detail in chapter 4.

mechanism and Gold Standard project activities. The local stakeholder consultations this thesis aim to analyze falls under this second dimension; and the following paragraphs briefly introduces the mechanisms for stakeholder relations management for CDM and Gold Standard projects.

1.3.1: SRM processes in the CDM

As mentioned above, CDM and Gold Standard project developers are required to carry out stakeholder consultations during the project planning phase. In the case of CDM projects this consultation process consists of two steps. The first step involves inviting local stakeholders to comment on the proposed project activity.[10] This is a requirement for validation, and the developer must provide the designated operational entity (DOE) with a summary of the comments received, along with a report on how due account has been taken of any such comments (Decision 3/CMP.1, pp. Annex, paragraph 37(b)). The second step is commonly referred to as the Global Stakeholder Process. It involves a 30 day period during which the project design document (PDD) must be made publically available (on the website of the UNFCCC or the DOE) and open for comments by Parties, stakeholders and UNFCCC accredited observers (Decision 3/CMP.1, pp. Annex, paragraph 40(b) - (d)).

1.3.2: SRM processes in the Gold Standard

The Fundamental Principles of the Gold Standard Certification Scheme asserts that "in order to reduce the risk of unwanted secondary effects in the carbon market, the Gold Standard requires an extensive stakeholder consultation where the community defines the most important indicators of social, economic and environmental success". And furthermore, that the stakeholder consultation guidelines is a "manifestation of the overall philosophy that project success and risks must be defined in a participatory process so as to reduce the chances that important project impacts will be overlooked." (Ecofys, TÜV-SÜD and FIELD (requirements), 2009, p. 19). In other words, The Gold Standard Foundation consider stakeholder relations management a key instrument for ensuring that Gold Standard projects in fact make verifiable positive contributions to the sustainable development of local communities.

[10] Local stakeholders are defined by the CDM modalities and procedures as "the public, including individuals, groups or communities affected, or likely to be affected, by the proposed clean development mechanism project activity" (Decision 3/CMP.1, pp. Annex, paragraph 1(e)).

In order to achieve this, the Gold Standard rules and procedures call for an extensive local stakeholder consultation (LSC) process. In short, this process is made up of the following elements:

- An initial stakeholder consultation round, including a physical meeting to which the project developer must proactively invite the Gold Standard Foundation and local stakeholders to participate; and provide these with a non-technical summary that allows them to understand the implications of the proposed project activity.[11] (Ecofys, TÜV-SÜD and FIELD (toolkit), 2009, pp. 45-46)
- During the initial LSC meeting local stakeholders are instructed to perform a blind sustainability exercise—where they are asked to give the proposed project activity a negative (-), neutral (0) or positive (+) score for each of the 12 environmental, social and economic indicators that make up the Gold Standard Sustainable Development Matrix (SD Matrix), and which is intended to measure the sustainable development impact of the project. The result of this exercise is combined with a corresponding SD Matrix prepared by the project developer (known as the detailed impact assessment), and any indicators left with a non-neutral score in the resulting consolidated SD Matrix must be included in the Gold Standard Monitoring Plan.[12]
- After the first round of stakeholder consultations the project developer prepares a LSC report and submits this to the Gold Standard Registry. Provided that the report is approved, the project will be granted Gold Standard applicant statues. This is followed by a second stakeholder "feedback" round, where stakeholders are notified on how comments from the initial round has been taken into account, and encouraged to make comments on the LSC report and if applicable the revised project documentation. This round must include all stakeholder involved in the first round, and it may include a physical meeting although this is not mandatory. (Ecofys, TÜV-SÜD and FIELD (toolkit), 2009, pp. 53-54)
- As of November 2011, the Gold Standard also formally requires that project developers implement measures to facilitate post-registration inputs from local stakeholders. These measures include a publically available *Continuous Input Process Book* for stakeholders to record comments or complaints (mandatory), telephone access (mandatory), internet/email access (mandatory) and a Nominated Independent Mediator (not mandatory). The project developer is required to document any comments received. And any issues identified through the above methods, as well as their corresponding mitigation measures must be

[11] For a complete list of stakeholder groups, see chapter 4, section 4.2.3.
[12] For more on the Blind Sustainability Exercise and the Detailed Impact Assessment, see chapter 4, section 4.2.2 and 4.2.3.

included in the project monitoring for the rest of the crediting period. (Gold Standard Foundation, 2011).

1.4: Research Design

The purpose of this thesis is to examine the role of stakeholders in realizing the proposed benefits of the Gold Standard; specifically, the role of the local stakeholder consultation process in ensuring that GS certified projects "demonstrate sustainable development benefits in local communities that are measured, reported and verified." In practical terms, the thesis examines the relationship between local stakeholders and Gold Standard project proponents, using a modified version of Steurer et al.'s (2005) conceptual stakeholder theory (*Sustainable Development – Stakeholder Relations Management*). This research approach will by thoroughly accounted for in chapter 2, which deals with the thesis' theoretical foundation.

1.4.1: Research question

The primary research question posed by the thesis is:

- To what extent, and how, are project level local stakeholder consultations resulting in increased sustainable development benefits from CDM Gold Standard project activities, thus contributing to the realization of the sustainable development objective of the Gold Standard?

In order to conduct a meaningful empirical analysis of this question it is necessary to have a clear idea of what sustainable development is, as such, the first analytical step of the thesis will be to determine what the essential characteristics of sustainable development are, as well as how contributions towards it should be measured. This is done in the final part of chapter 2, and will primarily rely on the definition developed by the United Nations, and on the operational framework developed by the Gold Standard.

1.4.2: Methodology

The Gold Standard Foundation requires that the key documentation following each step of the project registration process is made publically available. As mentioned above, the Gold Standard Rules and Procedures require project developers to document and report any comments received during the local stakeholder consultations, as well as the developers' justifications for how such comments are taken into account. This public documentation is the basis for the thesis' empirical analysis of the above research question.

1.4.2.1: Case selection

The 22 projects have been selected based on two criteria, 1) Gold Standard version; the thesis only considers projects using versions 2.0 or 2.1, and 2) Project stage; the thesis only considers projects with status as "validated", "registered" or "issued". The first criterion is based on significant differences between versions 1 and 2 of the GS Rules and Procedures, particularly with regard to the requirements for stakeholder consultations and reporting, which were considerably less standardized in version 1. E.g. the blind sustainability exercise and the standardized LSC report, both of which are important empirical sources for the thesis, were not required in version 1. The second criterion is based on the availability of public documentation; the further along a project is in the registration process, the more documentation is available. For "validated" projects the LSC report should be available, and for "registered" and "issued" projects additional documentation such as monitoring and verification reports might also be available. As such, the thesis examines all CDM Gold Standard projects that as of mid-May 2012 were listed in the Gold Standard Registry as "validated", "registered" or "issued", using version 2.0 or 2.1 of the GS Rules and Procedures.

Chapter 2: Theory - Stakeholder Perspectives and Sustainable Development

2.1: Introducing Stakeholder Theory

At its core, stakeholder theory revolves around the idea that a business has stakeholders, i.e. that there are groups and individuals who have a stake in the success or failure of a business (Freeman, Harrison, Wicks, Parmar, & De Colle, 2010, p. xv); and furthermore that the interests of these stakeholders are relevant for the long-term success and sustainability of the firm, and should thus be the subject of managerial attention. As such, stakeholder theory can generally be characterized as contradistinctive to the traditional stockholder conception of the corporation (Kaler, 2003), i.e. the view that the only purpose of business is to serve the interests of its owners. Or, as famously expressed by Milton Friedman, that "there is one and only one social responsibility of business – to use it[s] resources and engage in activities designed to increase its profits so long as it stays within the rules of the game, which is to say, engages in open and free competition without deception or fraud" (Friedman, 1970).[13]

2.1.1: The Basic Mechanics of Stakeholder Theory

Freeman et al. (2010, p. 3) points to a number of dramatic societal changes that have influenced the business world of the 21st century. The rise of globalization, the dominance of information technology, the liberalization of states (especially the demise of centralized state planning and ownership of industry), and increased societal awareness of the impact of business on communities and nations are all mentioned as factors that have made traditional ways of understanding business more or less obsolete. Furthermore, it is argued that most theories of business rely on what Freeman et al. (2010, p. 6) defines as the *separation fallacy*, i.e. the idea that "business" decisions can be separated from "ethical" decisions.

This notion is labeled as a fallacy based on the *open question argument* which asks the following questions: 1) if this decision is made, for whom is value created and destroyed, 2) who is harmed and/or benefited by this decision, and 3) whose rights are enabled and whose values are realized by this decision? Since these questions can be asked about virtually any business decision, the separation fallacy must be rejected (Freeman, Harrison, Wicks, Parmar, & De Colle, 2010, p. 7).

[13] Although Freeman et.al (2010, pp. 10-19) argues that none of the 'standard accounts' of business—including that of Friedman—are inherently incompatible with stakeholder theory.

As such, stakeholder theory has developed as an alternative managerial theory of business, grounded in what Freeman et al. calls the *integration thesis*, which is formulated in the following way, "Most business decisions or statements about business have some ethical content or an implicit ethical view. Most ethical decisions or statements about ethics have some business content or an implicit view about business". (Freeman, Harrison, Wicks, Parmar, & De Colle, 2010, p. 7). Based on this, it is the purpose of stakeholder theory to present managers with a practical way of putting business and ethics together that is implementable in the real world.

Provided that the above assumptions about business and ethics are accurate for business in general, they are even more so, for enterprises such as CDM projects which have explicitly expressed objectives that go well beyond profit maximization. As such it is no surprise that the Clean Development Mechanism, and even more so, the Gold Standard have formal and institutionalized provisions for obtaining stakeholder input and requirements for how such input should be taken into account.

2.1.2: Stakeholder identification

Another central issue in the stakeholder literature—which is instrumental if stakeholder theory is going to succeed in providing real world guidance on stakeholder relations management—is that of stakeholder identification. More specifically the questions of who (or what) *are* the stakeholders of the firm? And, to whom (or what) do managers pay attention? Answering these questions calls for two distinct types of stakeholder theories. On the one hand, a *normative theory* of *stakeholder identification* is required to explain logically why managers should consider certain classes of entities as stakeholders. And on the other hand, a *descriptive theory of stakeholder salience* to explain the conditions under which managers do consider certain classes of entities as stakeholders." (Mitchell, Agle, & Wood, 1997, p. 853).

This thesis largely ignores the first question. The focus of the thesis is on the Gold Standard local stakeholder consultations, and as the GS Rules and Procedures includes a detailed list of the stakeholder groups that must be included in this process, the question of stakeholder identification is of limited relevance.[14] The second question will be somewhat explored in the thesis; however the extent of this will be limited for two reasons. First, the nature of the empirical basis for the thesis limits the extent to which specific input can be attributed to specific stakeholders—e.g. the result of the blind sustainability exercise is ideally based on a consensus among all stakeholders, making it difficult to identify what kind of stakeholder is

[14] See chapter 2, section 2.4.1.3 for a list of the Gold Standard LSC stakeholder groups.

behind which indicator score. And second, the purpose of the thesis is to examine the Gold Standard local stakeholder consultations from the perspective of sustainable development—i.e. to examine if and how sustainable development is advanced by the use of stakeholder relations management—and as such questions relating stakeholder salience falls somewhat outside the specific scope of the thesis. Nevertheless, when the documentation allows for it, the thesis does attempt to attribute comments and indicator scores to specific stakeholders.

2.2: Delimiting Stakeholder Theory for the Specific Analytical Purpose of the Thesis

Originally conceptualized in order to address perceived limitations in traditional (economic) approaches to business and business management; stakeholder theory has evolved from a corporate-centric perspective into a more comprehensive research field, in which business–society relations are addressed from a wide variety of vantage points. This has also resulted in a large and diverse body of literature primarily concerned with guiding and reflecting on the theoretical development of stakeholder theory, i.e. so-called second-order theories. (Freeman, Harrison, Wicks, Parmar, & De Colle, 2010; Steurer, 2006). While extensive "theorizing about theory" falls well outside the scope of the thesis, a quick introduction to some of this literature is nonetheless required in order to justify and account for how stakeholder theory can be applied to the question of sustainable development governance in the CDM Gold Standard.

2.2.1: Stakeholder Theory as Descriptive, Instrumental or Normative

In one influential contribution, Donaldson & Preston (1995)—taking note of the diverging nature of the stakeholder literature—asserts that:

> *"Unfortunately anyone looking into this large and evolving literature with a critical eye will observe that the concepts stakeholder, stakeholder model, stakeholder management, and stakeholder theory are explained and used by various authors in very different ways and supported (or critiqued) with diverse and often contradictory evidence and arguments"*.

Based on this observation they attempt to bring some order to the stakeholder literature by distinguishing between its descriptive/empirical, instrumental and normative aspects; before evaluating the underlying evidence and arguments used to justify the stakeholder theory from the perspective of each of these.

In short, they claim that the underlying epistemological issue in the stakeholder literature is the question of why stakeholder theory should be accepted or preferred over alternative conceptions of business. After exploring how this question is handled in the literature, they argue that the three aspects should be seen as mutually supportive: Stakeholder theory is

unarguably *descriptive* in the sense that it presents and explains relationships that are observed in the real world (corporations have stakeholders); and the theory's descriptive accuracy is further supported by the predictive abilities of its instrumental aspect (stakeholder management contributes to successful economic performance). However, both the descriptive and the instrumental aspect derive their justification from a normative foundation (the presumption that managers and other agents act *as if* all stakeholders' interests have intrinsic value). As such Donaldson and Preston argue that the ultimate justification for stakeholder theory is found in its normative aspect, simply based on the fact that the most prominent alternative (the traditional stockholder theory) is morally untenable. (Donaldson & Preston, 1995).

Also noteworthy is the specification of Donaldson & Preston that their assessment and discussion of stakeholder theory refers specifically to the theory's application to the investor-owned corporation. They acknowledge that stakeholder concepts can be, and indeed have been, applied in other settings (e.g. government agencies and social programs), but argue that such situations are fundamentally different and that a simultaneous discussion of a variety of possible stakeholder relationships will lead to confusion rather than clarification (Donaldson & Preston, 1995, pp. 68-69).

2.2.2: Stakeholder Theory Perspectives – Corporate, Stakeholder and Conceptual

This corporate-centric view is challenged in Steurer (2006), where it is argued that stakeholder theory has evolved into a more comprehensive research field, and that "given the presumption that theorizing about theory is of scientific value, second-order stakeholder theories need to be as advanced as the theoretical developments they try to comprehend" (Steurer, 2006, p. 56). In order to address this shortcoming, a triple-perspective typology—where stakeholder management can be approached from a corporate, a stakeholder or a conceptual point of view—is proposed. However, the descriptive, instrumental and normative aspects of stakeholder research are not rejected by Steurer; rather they are incorporated as secondary heuristic dimensions applicable to each of the three perspectives.

The resulting typology consists of nine ideal-typical research approaches where stakeholder management can studied from, 1) a corporate point of view, where the focus is on how corporations deal with stakeholders; 2) a stakeholder point of view, focusing on how stakeholders try to influence corporations; or 3) a conceptual point of view, where it is explored how particular concepts relate to business–stakeholder interactions. Each of which can be conducted in a primarily descriptive, instrumental or normative way.

In practical terms, stakeholder theories within the conceptual perspective stand out in the sense that they look at both corporate and stakeholder interests from the perspective of a particular concept; and asks to what extent the—often normative—content of the concept in question is or can be advanced by stakeholder management. Concepts that have been studied from this perspective include among others 'the Common Good', federal ethics, human rights, environmental protection and sustainable development. (Steurer, 2006, pp. 59-60).

The paragraphs above have shown that 1) the normative aspect of stakeholder theory can be seen as not just an alternative to the descriptive and instrumental aspects, but rather as the ultimate justification for the stakeholder approach and 2) that stakeholder theory has evolved into a comprehensive research field in which business–society relations are studied, not just from a corporate-centric perspective, but also from a stakeholder perspective and from the perspective of a specific concept. This thesis assumes that these are accurate assessments of stakeholder theory, and the next section further examines how a conceptual stakeholder perspective can be used to study the effectiveness of stakeholder relations management in promoting sustainable development.

2.3: Stakeholder Relations Management from a Sustainable Development Perspective

2.3.1: Conceptual Stakeholder Theory

As mentioned above, conceptual stakeholder theory differs from other aspects of stakeholder theory primarily in point of view. Rather than examining stakeholder relations management (SRM) in terms of how it can benefit the corporation or serve the interests of stakeholders, conceptual stakeholder theory examines how SRM can be used to advance the contents of a particular concept. This difference is illustrated in table 2.1, which compares Steurer's (2006) nine ideal types of stakeholder theory. For each of the three perspectives the table lists the general focus as well as a broadly formulated "frequently asked research question", for the normative, descriptive and instrumental aspect respectively.

Table 2.1: Stakeholder Theory Perspectives

		Corporate	**Stakeholder**	**Conceptual**
Normative	Focus	Interprets the function of the corporation regarding wider society and SRM	Interprets the function and legitimacy of stakeholders and their claims	Interprets the normative characteristic of concept X and its significance for SRM/stakeholder theory
	FAQ	Why and how should corporations deal with stakeholders?	What makes stakeholders legitimate and how should they try to accomplish their stakes?	What issues of concept X should corporations and stakeholders take into account?
Descriptive	Focus	Describes corporate characteristics and behaviors regarding stakeholders	Describes stakeholder characteristics and behaviors regarding corporations	Describes how particular issues of concept X play a role in SRM/stakeholder theory
	FAQ	How do corporations actually deal with stakeholders?	What do stakeholders expect or claim and how do they actually try to achieve their claims?	Which issues of concept X do corporations and/or stakeholders take into account?
Instrumental	Focus	Analyses the connection between SRM and traditional corporate objectives	Analysis the connection between a stakeholder's strategy and its ability to meet the stakeholder's claims	Analyses the connection between SRM/stakeholder theory and the realization of concept X
	FAQ	How can SRM contribute to a corporation's performance?	How can stakeholders accomplish their claims best?	To what extent can concept X be achieved through SRM?

Source: (Steurer, 2006, p. 62)

2.3.2: Sustainable Development – Stakeholder Relations Management (SD – SRM)

In a second article, Steurer, Langer, Konrad, & Martinuzzi (2005) claims that sustainable development and stakeholder relations management (SRM) shares certain key characteristics that make them particularly suitable for simultaneous pursuit: Both concepts, 1) build on normative foundations, 2) rely on participation, and 3) aims at the integration of economic, social and environmental concerns. However, there are also crucial differences between them. Sustainable development is primarily content-oriented in that it specifies economic, social and environmental principles and requirements that must be satisfied if development is to be regarded as sustainable. SRM on the other hand is primarily a managerial concept, and integration of economic, social and environmental issues is the result of an interactive process to reconcile different stakeholder claims with traditional corporate interests. Based on these claims, it is argued that sustainable development and SRM can be regarded as complementary and mutually reinforcing concepts with remarkable similarities. (Steurer, Langer, Konrad, & Martinuzzi, 2005, pp. 273-274).

With this in mind, a specific conceptual theoretical perspective is proposed for the purpose of studying how stakeholder theory and stakeholder relations management relates to sustainable development. Based on the nine ideal types of stakeholder research presented above, the "sustainable development – stakeholder relations management (SD – SRM)" perspective explores how stakeholder theory can be used specifically to study which sustainable development issues are taken into account by corporations and stakeholders, in what way, and finally, to what extent the normative content of sustainable development can be advanced through stakeholder relations management. The following table (Table 2.2) presents the normative, descriptive and instrumental aspects of the conceptual SD – SRM perspective as well as the general research questions associated with each of these. In addition a corresponding version is included to illustrate specifically how a conceptual stakeholder research approach can be applied to sustainable development and the Gold Standard local stakeholder consultation process.

Table 2.2: Sustainable Development – Stakeholder Relations Management Perspectives

		SD – SRM [1]	SD – GS LSC
Normative	Focus	Interprets the normative characteristic of sustainable development and its significance for SRM/stakeholder theory	Interprets the normative content/conceptual characteristics of sustainable development, and its significance for the Gold Standard local stakeholder consultation process
	FAQ	What issues of sustainable development should corporations and stakeholders take into account?	What issues of sustainable development should Gold Standard project proponents and stakeholders take into account?
Descriptive	Focus	Describes how particular issues of sustainable development play a role in SRM/stakeholder theory	Describes how particular issues of sustainable development play a role in the Gold Standard local stakeholder consultations
	FAQ	Which issues of sustainable development are taken into account by corporations or stakeholders and in what way?	Which issues of sustainable development are raised by Gold Standard Project stakeholders and how are they taken into account by Gold Standard project proponents?
Instrumental	Focus	Analyses the connection between SRM/stakeholder theory and the realization of sustainable development	Analyses the connection between the Gold Standard local stakeholder consultation process and the realization of sustainable development
	FAQ	To what extent can sustainable development be achieved through SRM?	To what extent can the Gold Standard objective—ensuring that Gold Standard projects contributes to real and permanent sustainable development benefits in local communities—be achieved through the Gold Standard local stakeholder consultation process?

[1] Source: (Steurer, Langer, Konrad, & Martinuzzi, 2005, p. 266)

2.3.3: Theoretical Summary I, Stakeholder Theory

The objective of this thesis is to examine the effects of efforts to involve local stakeholders in the design of climate change mitigation projects—specifically clean development mechanism projects applying for Gold Standard certification; and the effect on the proposed projects' contributions to sustainable development. In order to this, the thesis employs a theoretical framework most commonly used to study the relationship between corporations and their stakeholders. The paragraphs above have shown how this framework can be, and indeed have been, adapted to study such relationships from the perspective of specific issues. This is referred to as conceptual stakeholder theory.

This theoretical approach is considered appropriate primarily due to the fact that, while the UNFCCC and the Kyoto protocol—which defines the purpose of the CDM—are political agreements between national governments, the principal actors in the clean development mechanism are commercial entities. Indeed, the functional idea behind the CDM is to reconcile climate change mitigation and sustainable development with traditional economic/corporate interests. For climate change mitigation this is accomplished by monetizing greenhouse gas reductions coupled with a rigorous regime for monitoring and certifying such reductions; thus creating a financial incentive for corporate actors to implement mitigation measures. As already mentioned, the situation is rather different for sustainable development and in the absence of financial incentives and rigorous regulations; the CDM relies on the designated national authorities (DNAs) to ensure that proposed projects contribute to sustainable development. The Gold Standard—which is the focus of the thesis—expands on this by providing project developers with additional voluntary requirements in exchange for the opportunity to market the project activity as a "best-practice" enterprise, and consequently the potential for increased revenues through premium priced carbon credits. In the implementation of these additional requirements the Gold Standard relies heavily on a participatory process, where local stakeholders are invited to evaluate the projected sustainable development benefits of the proposed project activity. As such, stakeholder feedback plays an instrumental role in the CDM Gold Standard's attempt to reconcile and integrate sustainable development benefits with traditional corporate interests.

For reasons that have already been touched upon, the provisions of the Kyoto Protocol and the CDM modalities and procedures fall short of ensuring that the clean development mechanism fully complies with its politically defined twin objectives. Effectively, the Gold Standard Foundation and its ground-up participatory approach exist in order to fill this implementation gap in the UNFCCC climate change mitigation regime. As such, the effectiveness of the GS

local stakeholder consultation process is not only interesting from a stakeholder – business point of view, but also for the broader question of how voluntary non-governmental, market-driven regulatory regimes can contribute to the implementation of public policy in areas where traditional state-centered approaches are falling short.

2.4: Defining Sustainable Development

As mentioned in the introduction, the thesis' first analytical step is to determine what sustainable development means, and furthermore, to determine the parameters by which its progress and ultimate achievement should be measured. In theoretical terms, this step interprets the sustainable development concept's normative content, establishing the key characteristics by which efforts to achieve it can be evaluated. At this time, it is appropriate to stress that the thesis' primary analytical intent is to examine the effectiveness of the Gold Standard local stakeholder consultation (LSC) process as a mechanism for policy implementation. With this in mind, the following introduction is not intended as a contribution to the sustainable development debate. Rather, the purpose here is to establish a reference for assessing the success of the LSC process by determining how the concept is interpreted by the UNFCCC and the Gold Standard Foundation.

In its most basic sense sustainable development is development that ensures that no essential and non-substitutable input to human life is lost (Tol, 2009). In a literal sense it is development that can be sustained over time (ideally indefinitely, but the issues of "development for whom" and "sustained for how long" are among the aspects of sustainable development that remain open for debate). In a practical and intuitive sense it is development which by virtue of responsible use and allocation of resources, is able to meet essential human needs while preserving natural systems, so as to ensure that future generations have the same opportunities to meet their needs. As a concept and political goal sustainable development is also in a nearly singular position in the sense that it enjoys universal support from practically every national government, large corporation and non-governmental organization on the planet. Or, in other words, sustainable development is much like motherhood and apple pie, very few are expressly against it.

However, while the general idea of sustainable development is widely agreed upon, the practical details of the concept has been, and still is, the subject of extensive debate. And despite numerous efforts to establish specific definitions of the concept, not to mention efforts to develop methodologies to measure if, and by how much, specific actions contribute to sustainable development; there is still no universally accepted definition, and no definitive way

to determine, qualitatively or quantitatively, the effect of particular measures—such as CDM project activities (United Nations Framwork Convention on Cimate Change, 2011). As mentioned in the introduction, this lack of an internationally accepted definition is partially responsible for the fact that evaluating the sustainable development contributions of CDM projects is currently the prerogative of the host country, rather than being governed by standardized regulations.

2.4.1: Sustainable Development under the United Nations Umbrella

The debate surrounding the concept of sustainable development neither started nor ended with the Brundtland commission (World Commission on Environment and Development (WCED)), but based on widespread use and frequency of citation, the by far most common and agreed upon definition of sustainable development is the one presented in the 1987 final report of the WCED, which reads:

> *"Humanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs." (World Commission on Environment and Development, 1987)*

The definition is comprised of two key concepts: 1) that of *needs*, in particular the essential needs of the world's poor, to which overriding priority should be given; and 2) the idea of *limitations* imposed by the state of technology and social organization on the environment's ability to meet present and future needs (Mebratu, 1998). And as such it is a definition that emphasizes the strong linkage between poverty alleviation, environmental concerns and social equitability; and which underlines the need to make economic development sustainable in order to address all three. The WCED definition is said to mark the concept's political coming of age, and *Our Common Future* can safely be credited with turning it into a concept of geopolitical significance. Furthermore, by explicitly framing sustainable development as a concept of human needs, rather than e.g. sustainable economic development, it has significantly influenced the content and structure of the continued debate over the meaning of the concept (Kirkby, O'Keefe, & Timberlake, 1995).

This is especially apparent in the way subsequent efforts to promote sustainable development under the United Nations umbrella have been shaped by the comprehensive and inclusive nature of the WCED definition. These efforts have over the last 4 decades included several high-level conferences, most notably the 1992, 2002 and 2012 earth summits; and have resulted in a number of significant and influential documents, including major international agreements on issues ranging from indigenous peoples, to biological diversity and climate change, as well as policy declarations such as the Millennium Development Goals and Agenda

21. This is also a process that has explicitly and implicitly cemented the understanding of sustainable development as involving the simultaneous pursuit economic development, social development and environmental protection.

Another key characteristic of the United Nations approach to sustainable development is that, while it is acknowledged that environmental concerns—particularly certain critical types of natural capital, such as the climate system—can necessitate limitations on growth; it is generally assumed that with a combination of greener economic development paths and a more equitable distribution of wealth, the environment has the capacity to meet not only the needs of the present, but also the future needs of a growing global population.

2.4.2: Operationalizing Sustainable Development in the CDM Gold Standard

The local stakeholder consultations are an instrumental part of the assessment and certification process that Gold Standard applicants must complete in order to demonstrate that they will make real and verifiable contributions to sustainable development. The backbone of this process is a referential framework, which operationalizes the concept of sustainable development for the purpose of Gold Standard GHG emission reduction projects. This framework—which is essentially a selection of indicators, covering each of the three dimensions of sustainable development—is presented in short form in table 2.3 below.[15] This thesis assumes that the characteristics attributed to sustainable development by the Brundtland commission, and expanded on by the continued work of the United Nations, are appropriate representations of the concepts normative content. Furthermore, it is also assumed that the referential framework developed by the Gold Standard Foundation is appropriate for the purpose of operationalizing the concept.

Table 2.3: The Gold Standard Sustainable development Indicators

Environment	Social Development	Economic and Technological Development
Air quality	Quality of employment	Quantitative employment and income generation
Water quality and quantity	Livelihood of the poor	Balance of payments and investments
Soil condition	Access to affordable and clean energy services	Technology transfer and technological self-reliance
Other pollutants	Human and institutional capacity	
Biodiversity		

[15] For a complete overview, with full descriptions and lists of possible parameters for each indicator, see Appendix I.

Chapter 3: Background I – the Case for Green Growth

The twin objective of the Clean Development Mechanism aims to address two of the defining issues of our time, the warming of the climate system and the prevailing social and economic development needs still facing significant parts of the world. This first background chapter briefly explores each of these issues as well as the implications they have for future development strategies.

3.1: Climate Change

While not the specific focus of this thesis, the issue of climate change is nonetheless an integral part of the thesis' background. Both due to the fact that climate change mitigation is one of the primary objectives of the CDM and the CDM Gold Standard; but also in the sense that rising concerns over anthropogenic interference with the climate system, have been instrumental in the development of the modern concept of sustainable development.

The scientific foundation for the UNFCCC is based on the continued work of the intergovernmental panel on climate change (IPCC). Following increased awareness and debate—by both scientists and policymakers—over the possibility of dangerous anthropogenic interference with the climate system, the IPCC was established in 1988—by the World Meteorological Organization (WMO) and the United Nations Environment Program (UNEP)—as a response to the apparent need for independent, scientific and technical advice to inform decision-making on this subject. With this in mind, the IPCC was set up as an explicitly scientific body; its purpose was, and still is to review and assess the most recent scientific, technical and socio-economic information produced worldwide relevant to the understanding of climate change. As such the IPCC itself does not conduct or pay for any research, aiming to always be policy relevant, but never policy prescriptive.

Since 1988, the IPCC has prepared and published regular assessment reports; each comprised primarily of contributions from three working groups charged with assessing, 1) the available scientific information on climate change, 2) the environmental and socio-economic impacts of climate change, and 3) the formulation of response strategies (mitigation and adaptation). Negotiations for the UNFCCC was initiated as a direct consequence of the first assessment report (FAR (1990)), and the relationship between the IPCC and UNFCCC is still considered a model for interaction between science and decision-makers. Following FAR, a further three assessment reports have been published in order to keep up with continuing improvements in

the availability of empirical data on climate change and the scientific understanding of this data. (IPCC Secretariat, 2010).

The current assessment report (AR4) was released in 2007 and is seen as a landmark due to the assertion that, "warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice and rising global average sea level." With regard to this, it is important to note that—unlike the UNFCCC, where the term climate change usually refers to anthropogenic climate changes—the IPCC uses the term to refer to "any change in the state of the climate that can be identified and that persists for an extended period, whether due to natural variability or as a result of human activity" (IPCC, 2007, p. 30).

However, in addition to establishing that the climate system is undoubtedly getting warmer, AR4 also asserts the following about *anthropogenic* contributions to climate change: "Global atmospheric concentrations of CO_2, CH_4 and N_2O have increased markedly as a result of human activities since 1750 and now far exceed pre-industrial values determined from ice cores spanning many thousands of years" and "Most of the observed increase in global average temperatures since the mid-20th century is *very likely* due to the observed increase in anthropogenic GHG concentrations" (IPCC, 2007, pp. 37 - 39). This is an "upgrade" from the Third Assessment Report (TAR), in which global warming was considered *likely* due to anthropogenic GHG concentrations, and represents a confirmation of the broad scientific consensus regarding the link between GHG emissions and climate change.

Furthermore, it is a fact that the stabilization of atmospheric GHG concentrations will require emissions to peak and decline, with a lower stabilization level requiring an earlier peak and decline.[16] As such, mitigation efforts over the next two to three decades will have a large impact on opportunities to achieve lower stabilization levels (IPCC, 2007, p. 66). AR4 also concludes that there is *high agreement* and *much evidence* that GHG concentrations can be stabilized if a portfolio of technologies that are either currently available or expected to be commercialized in the coming decades, can be effectively developed, deployed and diffused (IPCC, 2007, p. 68).

[16] The ultimate objective of the UNFCCC involves the stabilization of GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system (United Nations, 1992).

In other words, the notion that human activity is adversely affecting the climate system is increasingly supported by scientific evidence. As such, the case for greenhouse gas emission reduction is now stronger than ever.

3.2: The Case for Growth

For most people the world has become a better place to live over the last few decades. This development can be seen in a number of ways. For one, the World Bank reports that the portion of the global population living in extreme poverty—defined as living on less than $1.25 a day—fell from 43.1 percent in 1990 to 22.2 percent in 2008, with preliminary estimates showing that this trend has continued through 2010 and beyond. The years between 2005 and 2008 are also the only ones on record during which extreme poverty has been reduced across all six developing country regions (World Bank, 2012, p. 2).

Another measure indicating that the world is becoming a better place to live is the human development index (HDI)—developed by the United Nations Development Program for the 1990 first Human Development Report (HDR), the HDI is designed to offer a broader concept of development than that allowed by income alone, while at the same time retaining much of the simplicity that has given measures such as gross domestic product (GPD) its widespread appeal. To achieve this, the human development index combines life expectancy at birth, mean years of schooling, expected years of schooling and gross national income per capita into a single composite measure of health, education and living standards—which between 1990 and 2010 increased 18 percent on average (and 41 percent between 1970 and 2010). Like the World Bank extreme poverty measure, this average increase benefitted almost every country in the HDR data sample. Out of 135 countries (covering 92 percent of the world's population) only 3 had a lower in HDI in 2010 compared that of 1970. And unlike income measures, current HDI scores are showing a convergence between developed and developing countries (United Nations Development Programme, 2010).

Another interesting finding from recent Human Development Reports is the current lack of a significant correlation between economic growth, and improvements in health and education. This is explained by innovations that have allowed countries to significantly expand health and education services at comparatively very low costs. This also explains how developing countries can be catching up with developed countries in terms of HDI scores, when income measures still show diverging trends. However, the 2010 Human Development Report is quick to assert that these findings should not be used to downplay the importance of income and economic growth, which among other things, remain critical in determining people's

command over the resources necessary to gain access to food, shelter and clothing (United Nations Development Programme, 2010, p. 4).

As already alluded to in the above paragraphs, around one fifth of the world's people still live in extreme poverty, and despite unprecedented growth in a few large transition economies, the income gap between developed and developing countries is still growing. Furthermore, both economic growth and HDI improvements remain unevenly distributed internationally and domestically. For the East-Asia and Pacific region, poverty rates fell from 60 percent in 1990, to less than 20 percent in 2008. Whereas in Sub-Saharan Africa, the rate of population growth have exceeded the rate of poverty reduction, resulting in a higher number of people living in extreme poverty despite a lower poverty rate; and while the poverty rate for Sub-Saharan African has indeed seen significant drops recently, it was still nearly 50 percent in 2008.[17] Likewise, for South-Asia the poverty rate fell 18 percent between 1990 and 2008, but still remains at 36 percent. In other words, despite improvements these two regions are still very much affected by extreme poverty. Current poverty rate calculations also fail to account for the effect of the global financial crises, which is already slowing further progress, and may even reverse some of the recent gains (UNDP(1), n.d.; UNDP(2), n.d.).

With regard to the human development index—which in itself only presents country-wide averages—the 2010 Human Development Report also calculates an Inequality-adjusted HDI (IHDI) for the purpose of measuring the impact of domestic inequalities across all three HDI dimensions. On average these estimates result in a 22 percent loss in HDI, but countries with less human development generally have more multidimensional inequality. Also in this case, Sub-Saharan Africa is the big looser, with substantial domestic inequality across life expectancy, education and income measures (United Nations Development Programme, 2010, p. 87).

By and large, the last few decades have seen substantial improvements in living standards for almost every part of the world, as well as unprecedented growth in some parts of it. However, despite these improvements—in part because of their uneven distribution, but also due to the truly abysmal starting points from which they are calculated—the world is still facing a monumental development challenge. And it must be assumed that economic growth will continue to dominate the development priorities for large parts of the world for the foreseeable future.

[17] The 2005-2008, 4.8 percent drop in the poverty rate for Sub-Saharan Africa is the region's largest reduction since international poverty rates have been compounded (World Bank, 2012, p. 2).

Chapter 4: Background II – the CDM and the Gold Standard

This second background chapter describes the Clean Development Mechanism and the Gold standard, focusing first on the historical roots of the CDM, before presenting the CDM project cycle and a detailed overview of the Gold Standard Rules and Procedures.

4.1: The Clean Development Mechanism

As mentioned in the introduction, the CDM is designed to serve a double purpose; cost-effective emission reductions for Annex I countries on the one hand, and sustainable development benefits for non-Annex I countries on the other. The reasoning behind this is largely based on the conflicting nature of the two issues described in the previous chapter. The scientific basis for suggesting that anthropogenic GHG emissions are adversely affecting the climate system is increasingly robust and persuasive. And it is well documented that economic growth is a traditionally carbon intensive process.[18] Nonetheless, economic growth is likely to remain the overriding development priority for many developing countries for decades to come. As such, successfully stabilizing atmospheric GHG concentrations is dependent on the achievement of greener development paths in the developing world.

The CDM attempts to address this by exploiting synergies between GHG emission reduction goals and local sustainable development goals, ideally working as a win-win mechanism where Annex I countries gets cost-effective credits, project owners/developers gets additional funding, and non-Annex I countries benefit from contributions to their sustainable development objectives. However, as indicated earlier, the CDM modalities and procedures lack standardized requirements for how the sustainable development contributions of the mechanism should be realized. As a consequence the CDM is generally perceived as underperforming with regard to its sustainable development objective. The following section attempts to explain this gap in the CDM modalities and procedures by briefly examining the UNFCCC negotiations leading up to the establishment of the mechanism.

4.1.1: The Development and Establishment of the CDM

The CDM—while formally established in Article 12 of the Kyoto Protocol—is the result of a concept born during the proceedings of the Intergovernmental Negotiating Committee (INC), which was tasked with drafting the text that would eventually become the UNFCCC. In 1991, it was proposed by Norwegian negotiators that the convention should include a Joint

[18] This is perhaps best illustrated by the fact that developing countries—largely due to the unprecedented growth of China, and to some extent India—are now responsible for more than half of total global GHG emissions.

Implementation mechanism, under which two countries could form partnerships in their GHG reduction efforts, and share the benefits of implementing emission reduction projects in the country where such projects would be the most cost-effective (Figueres, 2006, p. 8). While of the same name as one of the three flexible mechanisms later introduced in the Kyoto Protocol, this initial proposal was significantly broader, and should be seen as the first step towards a general concept of global emissions trading, the intent of which was solely to reduce cost of emissions reductions. (Figueres, 2006).

During the negotiations leading up to the first Conference of the Parties to the Convention (COP1), representatives from developing countries began to voice concerns that the Joint Implementation mechanism as proposed by the Norwegians would become an instrument to allow industrialized countries to buy their way out of reduction commitments, while providing no benefits to developing countries. Industrialized countries on the other hand were reluctant to give up on the opportunity to reduce the cost of emissions reductions. By COP1, non-Annex I countries were largely unified in their resistance to JI, resulting in a compromise which established the Activities Implemented Jointly (AIJ) pilot phase. The new mechanism deviated from JI first and foremost by adding a criterion under which *activities implemented jointly should be compatible with, and supportive of national environmental and development priorities and strategies of the host country*. And in doing so, it became the first international emissions reductions mechanism to incorporate the interests of developing countries. (Figueres, 2006).

In the following years AJI was actively embraced by several industrialized countries, which established national AJI offices and invested in capacity building abroad; however, beyond Latin America, the mechanism failed to garner particular interest in developing countries. And even in Latin America, where several AJI entities were established, not all of these resulted in the development of actual AJI Projects. Furthermore, in the cases where experimental projects were developed, the priority was simply to find projects that could be financed by industrialized countries, and very little progress was made in terms of identifying and implementing ways to integrate and combine GHG emissions reductions and economic growth in developing countries.

As a result, most developing countries were still skeptical of the mechanism when it was evaluated at the 1997 COP3 in Kyoto. However, by this time the Convention's Annex I Parties were on the verge of accepting further GHG emission reduction commitments under the Kyoto Protocol, and were unwilling to relinquish the possibility to meet a portion of these commitments by way of cost-effective reduction measures implemented abroad. This time the

resulting compromise was born out of an unrelated Brazilian proposal, which was designed to compel Annex I Parties to comply with the proposed Kyoto emission targets by fining countries that failed to meet their commitments. These fines would be used to finance a *Clean Development Fund* which in turn would be used to support mitigation-, and particularly adaption measures in countries most adversely affected by climate change. Annex I Parties unsurprisingly opposed the system, but proposed to include the concept of a clean development fund in what would primarily be a market based mechanism to help reduce the cost of emissions reductions. This would finance the fund by imposing a 2 percent levy on the carbon credits generated by mitigation projects in developing countries. In order to ensure that Annex I Parties accepted the Kyoto reduction targets, the proposal was accepted, but only on the condition that contributions to host country sustainable development was made a primary goal of the mechanism, alongside cost-effective GHG emissions reductions. The result was the Clean Development Mechanism as defined in Article 12 of the Kyoto Protocol.

4.1.2: The CDM Project Cycle

This section briefly accounts for the basic stages of a CDM project activity, and in doing so also describe the key documents that follow the project from the planning and design phase, through to the issuance of carbon credits based on certified emission reductions. This is considered relevant because (as the following section on the Gold Standard will show), in order to limit additional transaction costs, the Gold Standard Rules and Procedures are designed to be incorporated into the existing CDM project cycle to the largest possible extent.

1: *Project Design Document (PDD)* - The PDD is one of three key documents involved in the CDM project validation and registration process. In short, this document describes the proposed project activity in order to demonstrate that the project meets the requirements for participation in the CDM. Most notably it must establish a project boundary, and include all relevant information on the projects' additionality claim, baseline and baseline methodology, duration and crediting period, and monitoring plan. Furthermore it must account for all sources of public funding for the project and its environmental impact. The PDD is also used as the basis for stakeholder consultations, and before being submitted for registration it must include a summary of the stakeholder comments.

2: *Letters of Approval* - Participation in the CDM is voluntary and project developers must obtain letters of approval from the designated national authorities (DNAs) of the Parties involved. These are the non-Annex I Party hosting the project activity, and the Annex I Party, or Parties, which receives CERs from the project activity. The letter of approval from the host

Party is a prerequisite for project registration, while an Annex 1 Parties must provide a letter of approval in order to have CERs forwarded from the CDM registry to its national registry. Project activities that have yet to submit a letter of approval from an Annex I Party at the time of registration is known as a unilateral CDM project. The letter of approval from the host country's DNA is also of special interest for this thesis, as it is the only requirement with regard to the sustainability contributions of a proposed project activity.

3: *Validation* - Project validation is the process of determining whether or not a proposed project activity is eligible for participation in the CDM by confirming that the project meets the requirements of the CDM. This process is conducted on the basis of the project design document and carried out by independent private entities known as designated operational entities (DOEs).

4: *Registration* - Project registration is the formal acceptance of a proposed project activity as a CDM project by the Executive Board (EB). The registration process is initiated by a request for registration submitted by the DOE, which includes the PDD along with a validation report from the DOE and the letter of approval from the DNA of the host country (and if available, letters of approval from one or more Annex I Parties). The request is appraised by a Registration and Issuance Team (EB-RIT) appointed by the Executive Board, and on the advice of the EB-RIT the proposed project activity is either formally approved or rejected by the EB.

5: *Monitoring* - Project monitoring is the process of continually measuring GHG emission within the project boundary, and comparing these to the baseline established by in the PDD in order to determine the volume of additional GHG emission reductions that can attributed to the project activity. The monitoring process is implemented according to a monitoring plan submitted as part of the PDD, and is conducted by the project participants in accordance to approved methodologies.

6: *Verification/Certification* - Verification is the periodic review and assessment by an independent DOE, of a CDM project's reported monitoring data, in order to ensure that the reported GHG reductions are real and additional to any that would have occurred in the absence of the CDM project activity. The findings of this review are presented to the project participants, the EB and the Parties involved in a verification report, which is also made publically available. As an additional safeguard the verification process cannot be conducted

by the same DOE that performed the original project validation.[19] Certification is the formal confirmation by the DOE that the emission reductions set out in the verification report were actually achieved, and it is considered to constitute a request for issuance of CERs.

7: *Issuance* - The issuance process is initiated when a request for issuance of CERs is lodged with the executive board, in the form a submitted certification report. The request is appraised by the EB-RIT assigned to the project activity, and unless rejected a number of CERs equivalent to the additional GHG emission reductions achieved by the project is created by the CDM registry administrator, and issued to the pending account of the EB. Before being delivered to the accounts of the project participants, an issuance fee must be paid and a 2 percent *adaption share of proceeds* are deducted from the total number of CERs generated by the project during the given crediting period. The issuance fee is also known as the administrative share of proceeds and is used to cover parts of the administrative expenses of the EB and other bodies involved in the protocol framework. The adaption share of proceeds is used to fund measures that assist developing country Parties to the Protocol in adapting to the adverse effects of climate change.[20]

8: *Forwarding* - Forwarding is the final step of the CDM project cycle and involves the actual transferring of CERs from the EB's pending account into the accounts of the project participants, as well as the CDM registry accounts relating to the administration and adaption share of proceeds.

4.2: The Gold Standard – Rules and Procedures

The Gold Standards background and purpose is briefly described in the introduction, the following sections will expand on this by providing a more detailed description of how the Gold Standard methodology aims to ensure that CDM projects provide verifiable contributions to host country sustainable development, with particular attention being given to the local stakeholder consultations process.[21]

As mentioned in the introduction the overall purpose of the Gold Standard is to address some of the perceived shortcomings of the project-based Kyoto Mechanisms (CDM & JI), primarily with regard to non-climate environmental concerns and the lack of coherent regulations for

[19] In order to reduce transaction costs, *small-scale project activities* are allowed to contract the same DOE to carry out both the validation and certification process.
[20] Project activities in least developed countries are exempt from paying the adaption share of proceeds.
[21] In addition to CDM projects, the Gold Standard is also open for JI projects and voluntary emission reduction (VER) projects. However since these projects fall outside the scope of the thesis, this aspect of the Gold Standard regulations will not be given any further attention in this overview.

the sustainable development aspect of the Clean Development Mechanism. In order to achieve this, the Gold Standard focuses on two things. First it screens projects based on project type, allowing only renewable energy and end-use energy efficiency projects. The intent of this positive list is to give special attention to projects that are considered both particularly important for climate change mitigation, as well as being capable of providing significant co-benefits vis-à-vis sustainable development; while excluding projects that are considered less likely to contribute significantly to either of these objectives. And second, projects applying for GS registration and labeling, must be in compliance with a number of additional regulations designed to ensure that a given project provides specific and verifiable sustainable development contributions. These regulations—which include both ex-ante assessments of potential co-benefits, as well as ex-post monitoring in order to ensure that the project actually realizes said potential—are presented in the next section.

As a voluntary non-state, market-driven governance structure, the Gold Standard aims to establish a premium price mechanism where GS labeled carbon credits fetch a relatively higher price on the UNFCCC compliance market (as well as other voluntary carbon markets), thereby creating an economic incentive for project developers to apply the standard's more rigorous methodologies. As such, the additional costs related to Gold Standard implementation cannot supersede the extra revenues generated by GS labeled credits. Due to this the Gold Standard registration and issuance regulations are designed to complement the existing UNFCCC regulations in such a way that they can be implemented without adding excessively to the existing cost and time requirements of the UNFCCC registration and issuance process.

Besides project eligibility—which in addition to project type, also consist of requirements related to project scale and project financing—the Gold Standard regulations can in broad terms be said to consist of an additionality assessment and a sustainability assessment; as well as provisions for the ex-post monitoring of the risks and benefits identified in the sustainability assessment. As mentioned above, the Gold Standard regulations are designed to complement existing UNFCCC regulations, and with respect to additionality the UNFCCC requirements already imposed on CDM projects are considered adequate for the Gold Standard as well. As for the sustainability assessment and the monitoring requirements, the UNFCCC regulations have been taken into account by more or less integrating the Gold Standard registration and issuance process in the existing CDM project cycle. The following sections will describe the key elements of these extra requirements.

4.2.1: "Do no harm" Assessment

The first step of the GS sustainability assessment process is to perform a "Do no harm" assessment; the purpose of which is to explore whether or not the proposed project activity can lead to negative environmental, social and/or economic impacts, that are serious enough to eliminate the project from the Gold Standard approval process. This self-assessment is primarily based on the safeguarding principles of the United Nations Development Program (UNDP) which are derived from the Millennium Development Goals. The principles are considered applicable across all project locations.

Using the Gold Standard safeguarding principles (see below); the "do no harm" assessment should identify and list all potential risks, including any additional critical issues that are not covered by the principles. Perceived risks should be accompanied by proposed mitigation measures to avoid or minimize any negative impacts.

Box 1: The Gold Standard Safeguarding Principles:

Human Rights

- The project respects internationally proclaimed human rights including dignity, cultural property and uniqueness of indigenous people. The project is not complicit in Human Rights abuses.
- The project does not involve and is not complicit in involuntary resettlement.
- The project does not involve and is not complicit in the alteration, damage or removal of any critical cultural heritage.

Labor Standards

- The project respects the employees' freedom of association and their right to collective bargaining and is not complicit in restrictions of these freedoms and rights.
- The project does not involve and is not complicit in any form of forced or compulsory labor.
- The project does not employ and is not complicit in any form of child labor.
- The project does not involve and is not complicit in any form of discrimination based on gender, race, religion, sexual orientation or any other basis.
- The project provides workers with a safe and healthy work environment and is not complicit in exposing workers to unsafe or unhealthy work environments.

Environmental Protection

- The project takes a precautionary approach in regard to environmental challenges and is not complicit in practices contrary to the precautionary principle. This principle can be defined as: "When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically."
- The project does not involve and is not complicit in significant conversion or degradation of critical natural habitats, including those that are (a) legally protected, (b) officially proposed for protection, (c) identified by authoritative sources for their high conservation value or (d) recognized as protected by traditional local communities

Anti-Corruption

- The project does not involve and is not complicit in corruption.

Source: (Ecofys, TÜV-SÜD and FIELD (toolkit), 2009)

4.2.2: Detailed Impact Assessment – Sustainable Development Matrix

Where the purpose of the *do no harm* assessment is to ensure that proposed project activities will not have negative environmental, social and/or economic side-effects; the purpose of the detailed impact assessment is to demonstrate positively that the project will make significant and specific contributions to host country sustainable development. This is accomplished through the use of a detailed scoring system, where project developers are required to assign a *positive (+)*, *neutral (0)* or *negative (-)* score to a number of predefined sustainable development indicators.

There are a total of twelve indicators, which are divided into three groups (environmental, social, and technological and economic). For each indicator, project developers must choose at least one appropriate and measurable parameter, and accurately describe the baseline situation for each parameter. This baseline is then compared to the planned/projected effects of the project activity, and awarded a score based on this comparison. In the event of negative results, developers are given the opportunity to neutralize these with appropriate mitigation measures. Once all the scores are added up, the project activity will only be eligible under the Gold Standard if it contributes positively in at least two of the three categories, and has a neutral score in the third category. However, this initial result is only a draft version, in order to finalize the SD matrix; the entire process is repeated in what is called a blind sustainability exercise during the local stakeholder consultations.

4.2.3: Local Stakeholder Consultation (LSC)

Another important aspect of the GS regulations is the requirement to involve local stakeholders in the design of the project activity. This is done primarily by means of one or more stakeholder meetings, where individuals and institutions that are in some way or other affected by the project, are invited to offer their opinion. These meetings should be held at a fairly early stage in the project development, to ensure that project developers are still genuinely open for comments that might require changes.

For CDM Gold Standard projects the stakeholder meetings must include the following groups:

- Local people impacted by the project or their official representatives,
- Local policy makers and representatives of local authorities,
- An official representative of the DNA (or the UNFCCC focal point if DNA has not yet been set up),
- Local non-governmental organizations working on topics relevant to the project,

- The local Gold Standard expert who is located closest to the project location,
- And relevant international non-governmental organizations supporting the Gold Standard, with a representative in the region as well as all GS supporter NGOs located in the host country of the project.

And for the LSC process to be meaningful, it is crucial that the project developer is able to communicate all the relevant information about the project and its potential impact, to all the participants. In practical terms this means that the project design must be presented in a language everyone can understand (or more than one language if necessary), and in a non-technical manor. In addition to project design, the focus of the consultation should be on potential social and environmental impacts.

4.2.3.1: Blind Sustainability Exercise

Perhaps the most important purpose of the LSC process is to get specific feedback on how the proposed project activity can be designed to be as beneficial as possible to local and regional sustainable development, while avoiding negative impacts. This is also the idea behind the blind sustainability exercise, where LSC participants are asked to discuss and provide comments on the indicators/parameters from the detailed impact assessment (SD Matrix). The goal is to get input on which indicators are considered most relevant from a local stakeholder perspective. In order to do this the project developer must present the indicators and their corresponding parameters in terms that all the participants can understand and relate to. To get an open and unbiased discussion, the outcome of the initial SD matrix is not disclosed; instead LSC participants are asked to do their own scoring, and in the event of negative scores, invited to voice their concerns as well as their opinions on possible mitigation measures. The blind sustainability exercise should result in a second SD matrix—preferably based on a consensus opinion among LSC participants—which, if it meets the GS requirements (at least two *positive* categories and one *neutral*), is combined with the result from the project developers initial detailed impact assessment to form what is called the consolidated SD matrix.

4.2.3.2: In-depth Sustainability Assessment

If specific indicators in the SD Matrix remain negative vis-à-vis the baseline situation after the LSC process, and no design changes or mitigation measures are planned or if the LSC process results in other significant negative comments; the issues in question should be the subject of dedicated discussions with relevant local stakeholders. Based on these discussions it will be decided if it is necessary to conduct a more in-depth sustainability assessment into the affected

indicators/issues. Where this is deemed necessary, such further assessments must be carried out by an independent third party (local relevant NGO, relevant GS supporter NGO, independent technical specialist etc.). Once completed, a second local stakeholder consultation might be considered to ensure that the issue/s has been adequately addressed.

4.2.3.3: LSC feedback round

After the first local stakeholder consultation round (which must include a physical meeting) is completed, the project design must be revised to incorporate the consolidated SD matrix and any other comments or concerns raised by local stakeholders, as well as the mitigation measures proposed to address these. Once these revisions have been made, a second round of local stakeholder consultations (known as the LSC feedback round), where the project developers must account for how comments from the first round have been incorporated into the revised project design. While a physical meeting is not required in the feedback round, the revised project documentation must be made available to all the parties involved in the first round of consultations, and must remain available and open for comments for at least two months before the project validation can be finalized. However the validation process as such can be performed in parallel with the stakeholder feedback period.

4.2.3.4: Gold Standard Validation and Registration

The Gold Standard registration process is managed by the Gold Standard secretariat[22], and for CDM projects relies primarily on three key documents, the *Gold Standard Project Design Document* (GS PDD), the *Gold Standard Passport* and the *Local Stakeholder Consultation Report*. Like the regular CDM registration process, the project documentation must be validated by an independent DOE before it can be submitted for registration.[23] Upon successful completion of the validation process a formal application for Gold Standard registration may be submitted via the *Gold Standard Registry and Project Administration System*; at this point the project enters into an eight week *registration review period*, during which the secretariat, the Technical Advisor Committee and the Gold Standard supporter NGOs can request further clarifications and/or corrective actions from the validator or the project developers. This is the final step of the registration process and once any such requests

[22] The Geneva based Gold Standard secretariat is the contact point for all market actors applying for the Gold Standard certification scheme, or otherwise making use of the Gold Standard. It is responsible for managing the operational activities of the Gold Standard, including capacity building, marketing and communications, certification, registration and issuance as well as maintenance of the Gold Standard rules and procedures.

[23] For CDM projects the Gold Standard validation must be carried out by an UNFCCC accredited DOE, and can be carried out parallel with the UNFCCC validation process by the same DOE (Ecofys, TÜV-SÜD and FIELD (requirements), 2009).

have been satisfactorily resolved, the project activity will be formally registered with the Gold Standard.[24]

4.2.3.5: Gold Standard Monitoring and Verification

As mentioned earlier, a key feature of the Gold Standard requirements is the inclusion of sustainable development in the project monitoring process, the purpose of which is to verify that the project activity has indeed contributed to the sustainable development of the host country, and thus qualify for Gold Standard labeling. As such the project developers must prepare a monitoring plan based on the information gathered in the *do no harm* assessment, the detailed impact assessment and the local stakeholder consultations. Specifically, all non-neutral indicators from the consolidated SD matrix, as well as all mitigation measures implemented to prevent the violation or to reduce the risk of violating a safeguarding principle from the do no harm assessment, or to neutralize a negative indicator from the SD matrix must be monitored. In the case of non-neutral indicators, the monitoring plan must describe the baseline situation and the projected effect of the project for each parameter; as well as provide details on how and with what frequency the parameters will be monitored. The specific means used to monitor the relevant parameters and mitigation measures should be proportionate to the size of the project, and should be based on a bottom-up approach using existing data and reporting mechanisms where possible (existing meters, paychecks etc.).

If and when the project activity becomes operational and is approved for Gold Standard registration, the sustainable development contributions attributed to the project must be monitored according to the methodologies presented in the monitoring plan. For each verification period the resulting data must be reported, and verified by a DOE, before the project can apply the Gold Standard label to issued CERs.

[24] If requests for clarification or corrective action are not addressed within one year the project will be deleted from the Gold Standard registry (Ecofys, TÜV-SÜD and FIELD (requirements), 2009).

Chapter 5: Findings

This chapter presents the result of the thesis empirical analysis. Divided into four primary parts, it starts with an overview of the 22 projects examined in the thesis. The next part (5.2) presents the findings from an evaluation of the blind sustainability exercise's impact on the consolidated sustainable development matrix. Described in section 4.2.2, this part of the local stakeholder consultations (LSC) produce an indicator by indicator comparative overview over how the sustainable development impacts of proposed projects, are assessed by stakeholders and project developers respectively. For each project, the thesis has examined the different versions in order to determine if differences between the stakeholder's and the project developer's assessments, are expressed in the final *consolidated sustainable development matrix*. In addition to determining if stakeholder input is changing the design of Gold Standard CDM projects, this part of the LSC process is also suited for analyzing specifically which aspects of sustainable development stakeholders and project developers assess differently. This information—combined with the project developers' explanations for how stakeholder input obtained in the blind sustainability exercise is taken into account—can give interesting insight into which aspects of sustainable development are considered important by local stakeholders and project developers, as well as the extent to which these specific aspects are advanced through the LSC process.

In addition to contributing to the sustainable development matrix, local stakeholders are encouraged to provide input in the form of comments and questions throughout the LSC process. As with the blind sustainability exercise, any such input must be reported, along with information on how the comments/questions are received and taken into account by the project developers. The third part of this chapter (5.3) presents the results from an analysis of this material. Again, the primary purpose is to determine if the input provided by stakeholders result in changes to the project design; but also to examine which aspects of sustainable development local stakeholder are concerned with, and what kind of design changes they are able to facilitate.

The fourth and final part of the chapter collates and summarizes the findings from the two empirical analyses in order to determine if, and to what extent, the Gold Standard local stakeholder consultations add significantly to the sustainable development benefits of Gold Standard CDM projects.

5.1: Project Overview

The following table presents an overview of the 22 projects examined in the thesis, along with their key characteristics. For each project the Gold Standard ID number and registration type is listed in the first column, with "regular" referring to new projects applying for both CDM and Gold Standard registration at the same time, and "retroactive" referring to already operational CDM projects applying for Gold Standard registration. The second column provides the projects' type and scale, and the third specifies the project host country. The last two columns indicate if the projects have been altered as a result of the two types of stakeholder input examined by the thesis.

Based on this overview a few general observations are immediately apparent:

- With regard to the sustainable development matrix, the *blind sustainability exercise* resulted in changes to the *consolidated sustainable development matrix* for 2 out of 22 projects.
- With regard to additional stakeholder input the picture is somewhat different. 20 out of 22 projects received specific comments during the LSC process; however for 13 out of 20 projects these comments did not result in design changes.
- In total, 8 out of 22 project designs (36 percent) were altered as a result of stakeholder feedback received during the LSC process.
- The table also shows that 19 out of 22 projects are renewable energy projects, with the remaining 3 being domestic energy efficiency projects.
- 3 out of 22 projects are retroactive, the rest are regular.
- 11 out of 22 projects are hosted by China, 5 by India, 2 by Thailand, and 1 each by Nepal, Vietnam, Brazil and Kenya.
- Finally, it must be noted that for 5 projects (the 3 retroactive (GS662, 761 and 765) and 2 others (GS820 and 821)), the publicly available documentation did not include the blind sustainability exercise. As such these projects have been excluded from the sustainable development matrix analysis below.

Table 5.1: Project Overview

GS ID# and Registration Type	Project Type, and Scale	Host Country	SD Matrix [I]	Stakeholder Comments / Impacts [II]
GS 607 / Regular	Renewable Energy (Wind) / Large Scale	China	**No**	**Yes / No**
GS 662 / Retroactive	Renewable Energy (Biogas) / Small scale	Thailand	**N/A**	**Yes / No**
GS 682 / Regular	Renewable Energy (Biogas) / Large Scale	China	**No**	**Yes / Yes**
GS 687 / Regular	Renewable Energy (Wind) / Large Scale	China	**No**	**Yes / No**
GS 710 / Regular	Renewable Energy (Solar) / Small Scale	China	**No**	**Yes / No**
GS 721 / Regular	Renewable Energy (Wind) / Large Scale	China	**Yes**	**Yes / No**
GS 725 / Regular	Renewable Energy (Wind) / Large Scale	Kenya	**Yes**	**Yes / Yes**
GS 727 / Regular	Renewable Energy (Biomass) / Large Scale	China	**No**	**Yes / No**
GS 728 / Regular	Renewable Energy (Biomass) / Large Scale	China	**No**	**Yes / No**
GS 746 / Regular	Renewable Energy (Biogas) / Small Scale	Thailand	**No**	**Yes / No**
GS 756 / Regular	Energy Efficiency (Domestic) / Small Scale	Nepal	**No**	**Yes / Yes**
GS 761 / Retroactive	Renewable Energy (Hydro) / Large Scale	China	**N/A**	**No / No**
GS 765 / Retroactive	Renewable Energy (Biomass) / Small Scale	Brazil	**N/A**	**No / No**
GS 768 / Regular	Renewable Energy (Biogas) / Small Scale	India	**No**	**Yes / No**
GS 820 / Regular	Renewable Energy (Biomass) / Small Scale	China	**N/A**	**Yes / Yes**
GS 821 / Regular	Renewable Energy (Biomass) / Small Scale	China	**N/A**	**Yes / Yes**
GS 837 / Regular	Renewable Energy (Wind) / Large Scale	China	**No**	**Yes / No**
GS 849 / Regular	Renewable Energy (Biomass) / Small Scale	India	**No**	**Yes / No**
GS 858 / Regular	Energy Efficiency (Domestic) / Small Scale	India	**No**	**Yes / Yes**
GS 859 / Regular	Energy Efficiency (Domestic) / Small Scale	India	**No**	**Yes / Yes**
GS 961 / Regular	Renewable Energy (Hydro) / Small Scale	Vietnam	**No**	**Yes / No**
GS 980 / Regular	Renewable Energy (Biogas) / Small Scale	India	**No**	**Yes / No**
Total: **22** projects			**2**	**20 / 7**

[I] Indicates whether or not the Consolidated SD Matrix for the project was altered as a result of the Blind Sustainability Exercise. N/A if Blind Sustainability Exercise is missing from the project documentation.

[II] Indicates whether or not changes to project design/implementation has been identified as a direct or indirect result of stakeholder input (comments received (Yes or No) / design alterations based on comments (Yes or No)).

5.2: Sustainable Development Matrix Analysis

As shown in the table above, the *consolidated sustainable development matrix* is demonstrably altered by the result of the *blind sustainability exercis*e in just 2 out of 22 projects. However, as shown in table 5.2 below, the *blind sustainability exercise* differs from the *detailed impact assessment* in 15 out of 17 projects.[25] In other words, for 13 projects the consolidated sustainable development matrix did not reflect the fact that local stakeholders and project developers differed in their assessment of the projects' projected sustainable development impacts.

Table 5.2: Sustainable Development Matrix Comparisons[26]

Number of projects where the result of the blind sustainability exercise differed from that of the detailed impact assessment.	**15/17**
Number of projects where the consolidated sustainable development matrix was changed as a result of the Blind Sustainability Exercise.	**2/15**

Based on these numbers, the thesis tentatively concludes that the blind sustainability exercise by and large does not result in design changes for Gold Standard CDM projects, and as such does not significantly increase the sustainable development benefits for project host countries, or local communities. In order to get a more detailed understanding of why this stakeholder input fails to affect project designs, the rest of this analysis will focus on the specific indicators of the sustainable development matrix. For this purpose, table 5.3 provides an overview over the total number of times each indicator was awarded a non-neutral score by a project developer (with one exception, all non-neutral scores in the detailed impact assessments are positive), as well as the total number of times each indicator was assessed differently by local stakeholders.

The most obvious results are, a) the high number of indicators assessed differently in the detailed impact assessment and the blind sustainability exercise (69), and the relative to this, very low number of indicators altered in the consolidated sustainable development matrix (2). And, b) the large variations across the twelve indicators, both in terms of how often each

[25] The remaining 5 projects are the ones lacking documentation for the blind sustainability exercise. Due to this the thesis is unable to determine if the consolidated sustainability matrix has been altered as a result of the local stakeholder consultations for these projects.

[26] For a detailed description of each indicator see, *Appendix I: The Gold Standard Sustainable Development Matrix, Indicators and Parameters*. And for a complete overview of the results from the detailed impact assessment, blind sustainability exercise, and consolidated sustainable development matrix for all 22 projects see, *Appendix II: Stakeholder Impact on the Consolidated SD Matrix for 22 Gold Standard CDM projects*.

indicator is given a non-neutral score by project developers, and how often they are assessed differently by local stakeholders.

Table 5.3: Indicator Breakdown I

Environment									**Total: 25 (average per indicator: 5) / 24 (4,8)**
Air quality	**14[I]/1[II]**	Water quality and quantity	**4/7**	Soil condition	**2/3**	Other pollutants	**4/3**	Biodiversity	**1*/10**

Social Development							**Total: 39 (average per indicator: 9,75) / 25 (6,25)**
Quality of employment	**14/5**	Livelihood of the poor	**7/7**	Access to affordable and clean energy services	**11/4**	Human and institutional capacity	**7/9**

Economic Development					**Total: 36 (average per indicator: 12) / 20 (6,6)**
Quantitative employment and income generation	**16/3**	Balance of payments and investments	**9/9/1[III]**	Technology transfer and technological self-reliance	**11/8/1[III]**

[I] Indicates the total number of projects where the indicator was awarded a non-neutral score by the project developer, i.e. in the detailed impact development assessment.
[II] Indicates the total number of projects where the indicator was assessed differently by the local stakeholders, i.e. in the blind sustainability exercise.
[III] Indicates the total number of projects where the indicator was changed in the consolidated sustainable development matrix.
*** The only negative, non-neutral score in the detailed impact assessments examined by the thesis.**

5.2.1: The Detailed Impact Assessment

The variations in the detailed impact assessments are fairly straightforward to interpret; since they are practically identical to the consolidated sustainable development matrixes, and since all the projects in the sample have been validated by a designated operational entity (DOE), it is safe to assume that the distribution demonstrated in table 5.3, is a good indication as to which aspects of sustainable development Gold Standard projects are expected to contribute to. In this sense the indicators *air quality*, *quality of employment*, and *quantitative employment and income generation* stand out with respectively 14, 14 and 16 (out of 17) projects reporting projected benefits in these areas. In addition to these, *technology transfer and technological self-reliance*, *balance of payments and investments*, and *access to affordable and clean energy services* are reported by more than half of the projects. On the other hand, with the exception of *air quality*, none of the environmental indicators are reported by more than one fifth of the projects in the sample. This is also apparent in terms of category, where *social development* and *economic development*—which covers just under 60 percent of the indicators (7 out of 12)—are somewhat overrepresented with 75 percent of non-neutral assessments (75 out of 100) belonging to one of these two categories.

Generally speaking the distribution accounted for above shows that projects first and foremost contribute to sustainable development in ways that follow naturally from the projects' core activities; this is especially apparent when taking into consideration the project types that are

eligible for the Gold Standard and the baseline situations in the countries that make up the data sample. Out of the top three indicators, two are job related and requires little more than that projects generate employment opportunities with basic health and safety standards. While the third (air quality), is an inherent consequence of renewable energy projects due to the fact that the "clean" electricity they generate is assumed to replace an equivalent amount of electricity from regional or national power grids that are largely fueled by fossil fuels such as coal; thus reducing nitrogen oxides (NOx) and sulfur oxides (SOx) emissions. Likewise, the group of indicators reported by around half of the projects can also often be justified by parameters which follow naturally from many projects core activities. E.g. many energy efficiency and renewable energy projects can easily be said to increase *access to clean and affordable energy services.*[27] The opposite is also true for the rest of the environmental indicators which are underrepresented in the detailed impact assessment.

These characteristics are not necessarily negative, as the projects themselves usually involve measures that are inherently positive in terms of sustainable development. Nor is it the intention of this thesis to evaluate the sustainable development contributions of CDM Gold Standard projects as such. However the reasoning behind the project developers' detailed impact assessments will be relevant for explaining the large differences vis-à-vis the blind sustainability exercise, as well as the negligible extent to which these differences are represented in the consolidated sustainable development matrix.

5.2.2: The Blind Sustainability Exercise

A total of 69 indicators are assessed differently by local stakeholders compared to project developers. Distributed across 17 projects, that comes out at an average of 4 indicators per project. Table 5.3 also shows that some indicators recur more often than others, and the following paragraphs briefly examines some of the indicators that stand out, in order to get an idea of the reasons behind the different assessments as well as the explanations used to justify how the indicators appear in the consolidated sustainable development matrix.

Balance of payments (9) & *technology transfer and technological self-reliance* (8): In total, at least one of these indicators is assessed differently by project developers and local stakeholders for 12 out of 17 projects (70 percent). The by far most common explanation for this disparity is that local stakeholders do not fully understand the financial or technical details behind the parameters that allow project developers to assign positive scores to these indicators, thus

[27] See appendix I for details about the sustainable development matrix indicators and their corresponding parameters.

simply awarding them neutral scores to show that they do not believe the project to have negative effects. Similarly, stakeholders sometimes give positive scores to projects that do not meet the technical requirements to make such claims, and that are therefore scored neutral by the project developers. E.g. 76 percent of the local stakeholders for GS687 believe that the project will have a positive effect on *technology transfer and technological self-reliance* because it promotes the utilization of domestic wind turbines and generator technology, however precisely since the technology is domestic, it does not constitute technology transfer as defined by Gold Standard regulations.

Livelihood of the poor (7): This indicator is assessed differently by project developers and local stakeholders in 40 percent of the examined projects, and in this case the different scoring for all 7 projects is accounted for by stakeholders giving positive or partially positive scores where the project developer has set a neutral score. With the primary reason for this disparity being that local stakeholders mistakenly consider permanent and temporary employment opportunities as valid parameters for this indicator.

Biodiversity (10): This is another indictor which is given positive or partially positive assessments by local stakeholders for almost 60 percent of the projects in the sample, but which is considered at best neutral by project developers. The most common explanation in this case is that the potentially positive effects projected by the stakeholders are either overestimated—and thus not significant enough to meet Gold Standard regulations—or difficult to demonstrably attribute to the project activity, and/or monitor properly.

Air quality: Given a positive score by 14 project developers, and assessed differently by stakeholders in 1 instance. In the case of project GS725, the project developers projected that the wind farm over its lifetime would contribute positively to indoor air quality by contributing to increased electrification of local communities, thus reducing the use of kerosene for lighting; while local stakeholders was concerned that the project could result in increased dust levels, and gave the indicator a neutral score. In the consolidated sustainable development matrix, the project developers kept the positive score, but included dust levels as an additional parameter for ex-post monitoring. However, besides this one exception, project developers and local stakeholder have made similar assessments of this indicator for every project in the sample. A likely explanation for the low degree of disparity between the developer and stakeholder assessments in this case, is that air quality and the parameters by which it is measured, as well as the way that projects affect these parameters, are relatively easy to explain

in a non-technical manor, and does not easily overlap with other indicators (as is the case with for example *livelihood of the poor* and *quantitative employment and income generation*).

5.2.3: Sustainable Development Matrix Comparisons – Summary Conclusions

As stated above, it is the opinion of this thesis that the blind sustainability exercise does not significantly influence the design of Gold Standard CDM projects. Despite the fact that it produced different assessments for a total of 69 indicators, just 2 were altered in the consolidated sustainable development matrixes. Project developers are required to report how different assessments are accounted for, and these reports reveal that the stakeholder input collected through the blind sustainability exercise is often characterized by a lack of understanding regarding the technical requirements for the parameters used to measure projects' effect on the indicators.

The Gold Standard regulations require that project developers must present all relevant information about the project and its impacts in a non-technical manor, and in a language (or languages) that the stakeholders can understand. However, the purpose of the sustainable development matrix—to establish specifically how the project contributes to sustainable development, and particularly how these contributions should be monitored ex-post—necessitates a certain degree of technical detail in order to satisfy the requirements of a fairly stringent ex-post monitoring regime. As such, many parameters suggested by stakeholders are either inappropriate for the chosen indictor or unsuitable for monitoring.

Having said this, the fact that projects are required to monitor non-neutral indicators, can also be interpreted as giving project developers an incentive to avoid adding more indictors to the consolidated SD matrix; as this would also increase the number of parameters the project would be required to monitor. However, determining if, and to what extent, this is happening is difficult based on the available documentation.

What can be determined is the direction the differences occur, i.e. if local stakeholders, compared to project developers, are generally more positive or more negative in their assessments of proposed projects' sustainable development impacts. And as shown in table 5.4 below, 45 out of the 69 indictors that were assessed differently were given more positive scores in the blind sustainability exercise compared to the detailed impact assessment. As such, this thesis considers it unlikely that project developers are overestimating the positive effects of proposed projects.

Table 5.4: Indicator Breakdown II

Total number of indicators assessed differently by stakeholders and project developers.	**69**
Total number of neutral [I] indicators assessed as positive or by local stakeholders.	**44**
Total number of neutral [I] indicators assessed as negative by local stakeholders.	**1**
Total number of positive [I] indicators assessed as neutral or negative by local stakeholders.	**23**
Total number of negative [I] indicators assessed as neutral or positive by local stakeholders.	**1**
[I] Score given by the project developer in the detailed impact assessment	

5.3: Stakeholder Comment Analysis

Having examined the effect of the blind sustainability exercise, and determined that the technical nature of the sustainable development matrix often constitutes a barrier for direct stakeholder influence on the consolidated SD matrix; the next part of the analysis takes a closer look at the rest of the local stakeholder consultation process. The focus of this part has first and foremost been on identifying what kind of input stakeholders provide, and on how project developers take this input into account.

Table 5.5 shows that out of the 22 projects examined by the thesis, a total of 20 projects report that they received specific stakeholder comments during the consultation process. Out of these, 7 projects report implementing specific design changes or additional measures to accommodate the comments. The rest of the analysis breaks down the stakeholder input according to the type of comment received, and the type of action taken by the project developer. Section 5.3.1 also provides examples of comments and project developer responses, to illustrate the more common types of input.

Table 5.5: Design and/or Implementation Changes Based on Stakeholder Input

Total number of projects where specific stakeholder comments are reported in the local stakeholder report.	**20/22**
Total number of projects where such comments resulted in specific measures and or changes to the project design.	**7/20**

Unlike the SD matrix analysis, this breakdown does not count individual comments; instead the input is categorized according to which aspect of sustainable development it relates to, with table 5.6 showing the number of projects which have received input of each type. As well as the number of projects which have responded to each type of input by way of clarifications and/or project alterations, respectively.

Table 5.6: Breakdown by type of comments / design change

Type of comment & total number of projects where each type of comment is reported.		**Comments taken into account by: clarifications, and/or**	**project alterations**
Environmental issues	**13**	**13**	**1**
Social issues	**6**	**6**	**2**
Economic issues	**6**	**6**	**0**
Safety/operational issues [1]	**15**	**15**	**7**

[1] A significant number of projects received stakeholder comments relating directly to the safety of the technologies employed by the project, and/or other comments regarding the operational implementation of the project. As these comments often fall somewhat outside of the standard aspects of sustainable development, safety/operational issues have been included here as a separate category.

In addition to issues pertaining to one of the three aspects of sustainable development, local stakeholders for many projects also had questions or comments concerning operational details or safety concerns, and due to their significant extent, these issues were included as a separate category.

The primary findings from this part of the analysis are, a) that between 60 and 70 percent of the projects in the sample received comments related to environmental issues or safety/operational issues, while 27 percent received comments related to social or economic issues. And, b) that out of the 7 projects that implemented design changes as a result of comments; all 7 did so for safety/operational issues, while 1 and 2 projects also made alterations related to environmental issues and social issues respectively.

The fact that the majority of the comments received are resolved by clarifications rather than design changes can also be interpreted to say something about the characteristics of the comments. Given that all of the projects in the sample have been validated, the thesis assumes that the way project developers have taken comments into account, have been verified and approved by a designated operational entity. As such it is likely that the majority of the stakeholder comments that were resolved by clarifications was either questions, or based on misunderstandings. This interpretation is also by and large supported by the empirical analysis of the LSC reports.

5.3.1: Example Comments and Design Changes

This section presents a selection of stakeholder comments from each category, along with the way the issues are resolved by the project developers.

Environmental issues: The by far most common stakeholder input in this category is related to possible pollution problems, particularly water contamination and land pollution during the

construction phase of proposed project activities; and is usually related to concerns about potential adverse effects on local agriculture. However, since these are issues that the project developers are required to assess and, if necessary mitigate by appropriate measures, in order to avoid negative scores in the sustainable development matrix; they are usually resolved by project developers giving a description of already existing mitigation measures.

Social issues: Examples of social issues that are raised by stakeholders are concerns regarding the transparency of projects and concerns regarding the potential for corruption. In both these cases the issue is usually resolved by project developers explaining how the project activity complies with all the relevant rules and regulations for the issue. However, in the case of project GS725 (a proposed wind farm in Kenya), many stakeholders complained about *poor communication and lack of information dissemination*; with the result that stakeholders and the project developer agreed on the *appointment of neutral community focal points for communication*, and *better methods and frequency of information dissemination – e.g. more printed material and better use of notice boards*. In return, the stakeholders themselves would *take more responsibility for informing peers, especially those who are illiterate or who may not understand English or kiSwahili.*

Economic issues: As table 5.6 shows, no projects have implemented design changes based on stakeholder input regarding economic issues. Input in this category is largely comprised of questions regarding employment opportunities, and requests for clarifications regarding expenses stakeholders mistakenly think they might incur as a result of participation in the project activity (in the case of energy efficiency or renewable energy projects directly involving end-users). However, there are also examples of questions about the financial details of the clean development mechanism and carbon credit trading generally.

Safety/operational issues: This is the category which received the most attention from local stakeholders, and while part of this is certainly accounted for by numerous questions relating to the practical implementation of project activities—which are resolved by clarifications from project developers—this category also includes several examples of stakeholder input which effected significant design changes. The perhaps best example involves two energy-efficiency improvement projects, where a development organization aims to use CDM revenues to replace traditional mud stoves with improved energy-efficient Chulika stoves for a total of 62.000 families living below the poverty line in rural India. Local stakeholders pointed out they currently use a minimum of two traditional stoves in order to cook flat bread and curry

simultaneously. Consequently the project developers modified the project designs so as to replace two traditional stoves with two Chulika stoves per household, rather than just one.

5.4: Are Local Stakeholder Consultations Increasing the Sustainable Development Benefits of Gold Standard CDM projects?

The purpose of this section is to collate the findings from the two empirical analyses above, in an attempt to answer the thesis' research question. As a practical aid in this, the thesis poses two additional supporting questions based on the theoretical framework accounted for in chapter two. These are:

- Which issues of sustainable development are the local stakeholders of Gold Standard CDM projects concerned with? And,
- How are these issues taken into account by Gold Standard project developers?

And the following paragraphs summarize the findings from the empirical analyses with regard to both questions.

The sustainable development matrix analysis is generally unsuitable to inform the first question as stakeholders are requested to assess each and every indicator of the SD matrix, and are thus "forced" to be concerned with more or less the full range of sustainable development issues. Although, the frequency with which each indictor is assessed differently by stakeholders and project developers, can be assumed to say something about which indicators stakeholders more often introduce new parameters for; and as such give some indication towards which aspects of sustainable development stakeholders are more concerned with. To the extent that this is accurate, the local stakeholders for Gold Standard projects seem to be somewhat more concerned with the environmental and social aspects of sustainable development, compared to the economic aspect.

As far as how these issues are taken into account by project developers, the SD matrix analysis suggests that project developers, while not necessarily ignoring stakeholder comments, are technically unable or unwilling to formally include the input in the consolidated SD matrixes. However, the fact that stakeholders and project developers have not made a single contradictory assessment for any indicator in the project sample, can indicate that the differences between the blind sustainability exercise (stakeholders) and the detailed impact

assessments (project developers), might not be as substantial as the number of differing indicator scores suggest.[28]

The stakeholder comments analysis on the other hand, gives a somewhat different impression. It reveals that local stakeholders provided input on proposed projects' environmental impacts in 60 percent of the projects examined by the thesis. The corresponding numbers for social and economic impacts are just over 25 percent for each category. These results are somewhat contradictory to the impression given by the SD matrix analysis; however, a lot of the stakeholder input included in this part of the analysis is in the form of questions asked during and after the project presentation and clarified by the project developers before the blind sustainability exercise is conducted. As such, it is possible that one of the reasons behind the low degree of differing assessments for environmental indicators in the sustainable development matrix is that these issues to a large extent have already been raised by stakeholders, and clarified by project developers.

Furthermore, in addition to input relating directly to sustainable development, stakeholders also had comments regarding specific safety related concerns and/or operational details for about 70 percent of the projects in the sample. Taking all this into consideration, the primary impression from this analysis is that stakeholders are more concerned with issues that directly affect their daily lives. E.g. environmental issues that could affect the livelihood of local farmers or in other ways endanger or inconvenience local communities, increased employment opportunities, and operational issues affecting end-users. This impression is substantiated by the fact that projects based on end-user measures—and thus directly affecting large groups of people—compared to other project types, received significantly more stakeholder input.

In terms of how this input is taken into account by project developers, the general impression is that the majority of comments received are resolved by clarifications, rather than design changes or additional measures. Even so about 30 percent of the projects in the sample had undergone modifications based on stakeholder input. And there is nothing that suggests that the clarification/design change ratio should be seen as an indication that stakeholder input is being inadequately taken into account by project developers, rather than being a result of the type of input received.

[28] While local stakeholders and project developers assessed a total of 69 indictors differently, there are no instances of stakeholders giving a negative score to an indicator given a positive score by the project developer, or vice versa. For details see table 5.4 and Appendix II.

5.4.1: Conclusion

The primary research question posed by the thesis is:

- To what extent, and how, are project level local stakeholder consultations resulting in increased sustainable development benefits from CDM Gold Standard project activities, thus contributing to the realization of the sustainable development objective of the Gold Standard?

The empirical analyses carried by the thesis have examined the local stakeholder consultation reports and Gold Standard Passports of 22 Gold Standard CDM projects. And the short answer suggested by these analyses is that the local stakeholder consultations can increase the sustainable development benefits of Gold Standard CDM projects, but for the majority of projects do not.

The thesis has separately examined the effect of the blind sustainability exercise, and found that the stakeholder input gathered in this part of the consultation process is not likely to result in significantly increased sustainable development benefits.

Input gathered throughout the rest of consultation process is significantly more likely to affect the project design. However, this is largely dependent on the type of input, and 70 percent of all design alterations observed by the thesis were caused by comments concerning specific operational details or safety issues. Not all of which can be said to be directly linked to sustainable development.

The general impression gained by this thesis, is that the local stakeholder consultation is what the project developer and the stakeholders make it (no more or less). As defined and regulated by the Gold Standard Foundation, and verified by independent designated operational entities, the process itself does not ensure increased sustainable development benefits. But as illustrated by some of the projects in the sample, under the right circumstances it does have the potential to increase local benefits by facilitating project design changes. And furthermore, it is the opinion of the thesis that for the majority of the projects in the sample, the consultation process has played a valuable role in keeping local stakeholders informed about the purpose of the project and on how it will affect the local communities.

Finally, it must be noted that due to the limited number projects examined by the thesis, it is not realistic to use these findings to make generalized assertions about the overall effectiveness of the Gold Standard local stakeholder consultations for all of the 700+ projects currently at various stages in Gold Standard pipeline.

Chapter 6: Concluding Remarks

This thesis has examined the Gold Standard local stakeholder consultation process. The intent has been to determine if this process contributes to increased sustainable development benefits from Gold Standard CDM projects, and the thesis' conclusion has been that for the majority of the projects this is not the case.

The thesis has the following closing remarks about this conclusion:

6.1 About the Methodology

The empirical basis for the thesis has been the Gold Standard public documentation, primarily the local stakeholder consultation reports and the Gold Standard passports. And, in determining the outcome of the local stakeholder consultations the thesis has used a fairly conservative approach. The focus has been on the extent to which the consultations have resulted in discernible and formal changes to project designs. The reasoning behind this approach is related to one of the Gold Standard's fundamental intentions; that certified projects should "demonstrate real and permanent GHG reductions and sustainable development benefits in local communities that are *measured*, *reported* and *verified* (emphasis added)". And for benefits to be measured, reported and verified, they must be included in the project design. As such, the thesis has considered design changes to be a minimum requirement for claiming that the LSC process has increased a project's sustainable development benefits. As a consequence it is possible that the stakeholder consultations also provides less documented and formalized sustainable development contributions that are not considered by the thesis.

6.2: About the Local Stakeholder Consultation Process as a Sustainable Development Contribution in itself

One aspect of the Gold Standard local stakeholder consultation that has not been considered by the thesis, but which can be considered relevant, is the extent to which the consultation process itself is a sustainable development benefit. With regard to this, it is the opinion of the thesis that the participatory nature of the consultation process can contribute to local capacity building, and that it almost certainly contributes to increased awareness regarding environmental and socio-economic issues. As such it can be seen as a valuable tool for disseminating knowledge about climate change and sustainable development.

References

Adams, W. (2006). *The Future of Sustainability: Re-thinking Environment and Development in the Twenty-first Century.* Report of the IUCN Renowned Thinkers Meeting, 29-31 January 2006, The World Conservation Union.

Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol. (Decision 3/CMP.1). *Modalities and procedures for a clean development mechanism as defined in Article 12 of the Kyoto Protocol.* Report of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol on its first session, held at Montrealfrom 28 November to 10 December 2005.

Donaldson, T., & Preston, L. (1995, January). The Stakeholder Theory of the Corporation: Concepts, Evidence, and Implications. *Academy of Managment Review, 20*(1), 65-91.

Ecofys, TÜV-SÜD and FIELD (requirements). (2009, June). *Gold Standard Requirements Version 2.1 effective June 2009.* Retrieved April 23, 2012, from The Gold Standard Rules & Toolkit Website: http://www.cdmgoldstandard.org/wp-content/uploads/2011/10/GSv2.1_Requirements-11.pdf

Ecofys, TÜV-SÜD and FIELD (toolkit). (2009, June). *Gold Standard Toolkit 2.1 June 2009.* Retrieved April 23, 2012, from The Gold Standard Rules & Toolkit Website: http://www.cdmgoldstandard.org/wp-content/uploads/2011/10/GSv2.1_Toolkit_Clean-11.pdf

Ecofys, TÜV-SÜD and FIELD. (2008, July). *Gold Standard Version 2 Upgrade July 2008.* Retrieved April 23, 2012, from The Gold Standard Rules & Toolkit Website: http://www.cdmgoldstandard.org/wp-content/uploads/2011/11/GSV2_Upgrade-from-V1.pdf

Figueres, C. (2006). Sectoral CDM: Opening the CDM to the Yet Unrealized Goal of Sustainable Development. *McGill International Journal of Sustainable Development Law and Policy, II*(1), 5-27.

Freeman, R., Harrison, J., Wicks, A., Parmar, B., & De Colle, S. (2010). *Stakeholder Theory - The State of the Art.* Cambridge: Cambridge University Press.

Friedman, M. (1970, September 13). The Social Responsibility of Business Is to Increase Its Profits. *The New York Times Magazine*.

Glasbergen, P. (2007). 1. Setting the scene: the partnership paradigm in the making. In P. Glasbergen, F. Biermann, & A. P.J. Mol (Eds.), *Partnerships, Governance and Sustainable Development* (pp. 1-25). Cheltenham: Edward Elgar Publishing Limited.

Gold Standard Foundation. (2011). *22 November 2011: Continuous Input/Grievance Mechanism for Gold Standard Projects.* Retrieved May 1, 2012, from The Gold Standard TAC & Rule Updates Website: http://www.cdmgoldstandard.org/wp-

content/uploads/2011/11/Continuous-Input-Mechanism-for-Gold-Standard-projects-2_SMW.pdf

IPCC. (2007). *Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change.* Geneva: Core Writing Team, Pachauri, R.K and Reisinger, A. (eds.).

IPCC Secretariat. (2010). *Understanding Climate Change: 22 years of IPCC assessment.* Retrieved May 4, 2012, from Intergovernmental Panel on Climate Change (IPCC) Website: http://www.ipcc.ch/pdf/press/ipcc_leaflets_2010/ipcc-brochure_understanding.pdf

Kaler, J. (2003). Differentiating Stakeholder Theories. *Journal of Business Ethics, 46*(1), 71-83.

Kirkby, J., O'Keefe, P., & Timberlake, L. (1995). *The Earthscan Reader in Sustainable Development.* London: Earthscan Publications.

Konrad, A., Steurer, R., Langer, M., & Martinnuzzi, A. (2006). Empirical Findings on Business-Society Relations in Europe. *Journal of Business Ethics, 63*(1), 89-105.

Mebratu, D. (1998). Sustainability and sustainable development: Historical and conceptual review. *Environmental Impact Assessment Review, 18*(6), 493-520.

Mitchell, R., Agle, B., & Wood, D. (1997). Toward a Theory of Stakeholder Identification and Salience: Defining the Principle of Who and What Really Counts. *The Academy of Management Review, 22*(4), 853-886.

Olsen, K. H. (2007, September). The clean development mechanism's contribution to sustainable development: a review of the literature. *Climatic Change, 84*(1), 59-73.

Paulsson, E. (2009, February). A review of the CDM literature: from fine-tuning to critical scrutiny? *International Environmental Agreements: Politics, Law and Economics, 9*(1), 63-80.

Sterk, W., Rudolph, F., Arens, C., Eichhorst, U., Kiyar, D., Wang-Helmreich, H., et al. (2009). *Further Development of the Project-Based Mechanisms in a Post-2012 Regime.* Berlin: Federal Ministry for the Environment, Nature Conservation and Nuclear Safety.

Steurer, R. (2006). Mapping Stakeholder Theory Anew: From the 'Stakeholder Theory of the Firm' to Three Perspectives on Business-Society Relations. *Business Strategy and the Environment, 15*(1), 55-69.

Steurer, R., Langer, M. E., Konrad, A., & Martinuzzi, A. (2005). Corporations, Stakeholders and Sustainable Development I: A Theoretical Exploration of Business–Society Relations. *Journal of Business Ethics, 61*(3), 263-281.

The Gold Standard Foundation. (n.d.). *Who we are | GSF*. Retrieved April 23, 2012, from The Gold Standard Website: http://www.cdmgoldstandard.org/about-us/who-we-are

Tol, R. S. (2009). Economic Models for Sustainable Development. In V. Bosetti, R. Gerlagh, & S. Schleicher (Eds.), *Modelling Sustainable Development: Transitions to a Sustainable Future* (pp. 3-17). Edward Elgar Publishing.

UNDP(1). (n.d.). *The Economic Crisis in Africa*. Retrieved May 22, 2012, from United Nations Development Programme:The Economic Crisis: http://web.undp.org/economic_crisis/africa.shtml

UNDP(2). (n.d.). *The Economic Crisis in the Asia-Pacific Region*. Retrieved May 22, 2012, from United Nations Development Programme:The Economic Crisis: http://web.undp.org/economic_crisis/asia.shtml

UNFCCC Secretariat. (2007). *Report of the review of the initial report of the Kingdom of Norway.* Geneva: United Nations Office at Geneva.

UNFCCC Secretariat. (n.d.). *CDM: CDM in Numbers*. Retrieved April 21, 2012, from The United Nations Framework Convention on Climate Change (UNFCCC) CDM Website: http://cdm.unfccc.int/Statistics/index.html

UNFCCC Secretariat. (n.d.). *Global Warming Potentials*. Retrieved April 22, 2012, from The United Nations Framework Convention on Climate Change (UNFCCC) Website: http://unfccc.int/ghg_data/items/3825.php

UNFCCC Secretariat. (n.d.). *Introduction to the Convention*. Retrieved April 12, 2012, from The United Nations Framework Convention on Climate Change (UNFCCC) Website: http://unfccc.int/essential_background/convention/items/6036.php

UNFCCC Secretariat. (n.d.). *Kyoto Protocol*. Retrieved April 12, 2012, from The United Nations Framework Convention on Climate Change (UNFCCC) Website: http://unfccc.int/kyoto_protocol/items/2830.php

UNFCCC Secretariat. (n.d.). *Mechanisms under the Kyoto Protocol*. Retrieved April 16, 2012, from The United Nations Framework Convention on Climate Change (UNFCCC) Website: http://unfccc.int/kyoto_protocol/mechanisms/items/1673.php

United Nations. (1992). United Nations Framework Convention on Climate Change.

United Nations Development Programme. (2010). *Human Development Report 2010.* New York: Palgrave Macmillan.

United Nations Framwork Convention on Cimate Change. (2011). *Benefits of the Clean Development Mechanism 2011.*

World Bank. (2012). *World Development Indicators 2012.* World Bank.

World Commission on Environment and Development. (1987). *Our Common Future.* New York: Oxford University Press.

Appendix I: The Gold Standard Sustainable Development Matrix, Indicators and Parameters

Indicator	Description	Possible Parameters
Environment:		
Air quality	Air quality refers to changes compared to the baseline in: • Pollution of indoor and outdoor air which may have a negative impact on human health or the environment, including particulates, NOx, Sox, lead, carbon monoxide, ozone, POPs, mercury, CFCs, Halons. Also odour is considered to be a form of air pollution. Pollution with gases covered under the Kyoto Protocol (carbon dioxide (CO_2), methane (CH_4), nitrous oxide N_2O, hydrofluorocarbons (HFCs),perfluorinated carbons (PFCs) and sulphur hexafluoride (SF6).) are not included in this category as this category refers to changes in the environment in addition to reductions of greenhouse gases since GHG reductions are included in all greenhouse gas reduction projects by definition.	Concentrations and Emissions of : • Nox • Sox • Lead • CO • Ozone • POPs • Mercury • CFCs • Halons • Respirable Suspended • Particulate Matter (RSPM) • NH_3 • SO_2 • NO_2 • PM_{10} • VOC • Total Suspended Particulate Matter (TSPM)
Water quality and quantity	Water quality and quantity refer to changes compared to the baseline in: • Release of pollutants and changes in water balance and availability in ground- and surface water and its impacts on the environment and human health, including biological oxygen demand and chemical oxygen demand, thermal pollution, mercury SOx, NOx, POPs, lead, coliforms (bacteria from animal waste)	Levels of : • Biological oxygen demand • Biochemical oxygen demand • Thermal pollution • mercury • Sox • Nox • POPs • Lead • Coliforms (bacteria from animal waste)
Soil condition	Soil condition refers to changes compared to the baseline in: • Pollution of soils, pollution of soils can be caused by lead, SOx, NOx, mercury, cadmium, possibly combined by a negative corresponding impact on human health. • Organic matter content • Erosion level	Levels of : • Lead • Sox • Nox • mercury • cadmium

Other pollutants	This indicator refers to changes compared to the baseline in: • Other pollutants of the environment which are not already mentioned. For instance level of noise/light, frequency of noise/light and time occurrence (daytime/night-time, weekdays/weekend) are relevant for consideration	• Level of noise • Frequency of noise (per day, per • week, per month) • Time occurrence(day/night, • weekdays/weekend)
Biodiversity	Contribution to biodiversity refers to changes compared to the baseline in: • Number of genes (i.e., genetic diversity within a species), species and habitats existing within the project's impact boundaries. • Alternation or destruction of natural habitat • Depletion level of renewable stocks like water, forests, fisheries	• Number of affected and/or threatened Plants • Number of affected and /or threatened mammals, birds, reptiles, fishes, and other species and habitats
Indicator	**Description**	**Possible Parameters**
Social Development:		
Quality of employment	Quality of employment refers to changes compared to the baseline in: • Labor conditions, such as job-related health and safety. • Qualitative value of employment, such as whether the jobs resulting from the project activity are highly or poorly qualified, temporary or permanent.	• Certificates
Livelihood of the poor	Livelihood of the poor refers to changes compared to the baseline in: • Poverty alleviation, e.g. changes in living standards, number of people living under the poverty line. • Access to health care services (hospitals, doctors, medication, nurses etc.), affordability of services, reliability and quality of services, and disease prevention and treatment, including HIV AIDS, measles, TB, malaria, cholera and others. • Access to sanitation including access to toilets/washrooms. Waste management facilities that offer the possibility of deposing waste in a sanitary way. • Access to an appropriate quantity, quality and variety of food that is a prerequisite for health. • Changes in proneness to natural disasters that may be climate change related (e.g. droughts, flooding, storms locust swarms, etc.) or unrelated (e.g. earthquakes, volcano outbreaks). • Long-term changes that differ from natural disasters in the sense that they occur steadily/increasingly but not suddenly (e.g. community's dependency on river water from a river with diminishing volumes of water) Changes must be directly related to the service and not an unintended impact.	• Children immunized against measles. • Maternal mortality ratio HIV prevalence among pregnant women. • Condom use rate of the contraceptive prevalence rate. • Condom use rate for high-risk people. • Population with comprehensive correct knowledge of HIV/AIDS/other diseases. • Prevalence and death rates associated with malaria. • Population rate in malaria-risk areas using effective malaria prevention and treatment measures. • Prevalence and death rates associated with tuberculosis. • Proportion of tuberculosis cases

	detected and cured under directly observed treatment short course DOTS (Internationally recommended TB control strategy). • Infant mortality rate. • Life expectancy. • Number of hospitals available. • Number of doctors. • Number of physicians. • Number of nurses. • Proportion of births attended by skilled health personnel. • Under-five mortality rate. • Infant mortality rate. • Quality improvement of health care services. • Number of population with access to improved sanitation, urban and rural. • Number of population who can access to effective waste management system. • Prevalence of underweight children under-five years of age. • Proportion of population below minimum level of dietary energy consumption. • Availability of Reliable disaster warning and relief system at community, local, regional, and national levels. • Knowledge and information dissemination regarding natural disaster.

Access to affordable and clean energy services	Access to energy services refer to changes compared to the baseline in: • Presence, affordability of services and reliability of services. • Reducing dependency of fuel/energy imports that may lead to more sustainable and affordable energy services in a country. Also decrease in risk of political conflicts caused by energy imports may be included.	• Energy use • Traditional fuel consumption • Change in Energy use • Change in Traditional fuel consumption (% of total energy requirements) • Electricity consumption per capita (kilowatt-hours)
Human and institutional capacity	Human and institutional capacity refers to changes compared to the baseline in: • Education & skills: Access to primary, secondary and tertiary schooling as well as affordability and quality of education. Educational activities which are not part of the usual schooling system, such as environmental training, awareness raising for health or other issues, literacy classes for adults, and other knowledge dissemination. • Gender equality: Livelihood and education for women that may include special schooling opportunities as well as other woman-specific training, awareness-raising, etc. • Empowerment. Changes in the social structure, e.g. caused a change in the distribution of income and assets. This may result in shifts in decision-making power at project level(e.g. participation in project executive board, ownership of CERs etc.), community level (e.g. community council), or at a higher level. Especially in communities with diversified ethnic or religious structures, changes in income and asset distribution may have an impact. Especially ownership of CERs or other direct involvement in the project may support participation in project decision-making.	• Female combined gross enrolment ratio for primary, secondary and tertiary schools. • Female Adult literacy rate. • Change in female earned income. • Change in number of jobs and positions for women. • Change in decision-making structures at the community, local government levels. • Change in income and asset distributions by region, ethnicity, religion, and socio-economic groups. • Women in government or decision making groups at community, regional, ministerial levels.
Indicator	**Description**	**Possible Parameters**
Economic and technological development:		
Quantitative employment and income generation	Quantitative employment and income generation refers to changes compared to the baseline in: • Number of jobs • Income from employment in the formal and informal sector. Other income, such as from ownership CERs, may be included	• Household income generated from the project.

Balance of payments and investments	Balance of payments and investment refer to changes compared to the baseline in: • Net foreign currency savings resulting from a reduction of for example fossil fuel imports as a result of CDM projects. • Investment into a country/region or technology. Without proper access to investment, projects may demonstrate credibility and reliability of loan takers and trust in the financial structure. Hence future investments into similar or other activities may be enabled. Only if financing possibilities are limited in the country/region or technology, a positive impact from demonstration may exist. Investments may come from national or international sources. Bilateral and unilateral investment should be distinguished, since the former do have this effect of demonstrating the viability of the host as a destination for investment, whereas the latter have this to a much lesser extent.	• Balance of payments. • Amount of domestic investment. • Amount of foreign direct investment.
Technology transfer and technological self-reliance	Technology transfer and technological self-reliance refer to changes compared to the baseline in: • Technology development as well as adaptation of new technologies to unproven circumstances. Technology can be sourced from outside or inside the country as long as it is new to this particular region and introduced in a proven sustainable way. Demonstrating the viability of technologies new to a country/region may help in transforming the energy sector. • Activities that build usable and sustainable know-how in a region/country for a technology, where know-how was previously lacking. This capacity building enables spill-over effects to the area by replicating similar or different projects. • Amount of expenditure on technology between the host and foreign investors regarding the contribution of domestically produced equipment, royalty payments and license fees, imported technical assistance or the need for subsidies and external technical support.	• Number of workshops, seminars, and training-related opportunities held. • Number of participants who attend those capacity building activities. • R&D expenditures.

Source: ??

Appendix II: Stakeholder Impact on the Consolidated SD Matrix for 22 Gold Standard CDM Projects

GS ID#	SD Matrix	Gold Standard Sustainability Indicators											
		Environment					Social Development				Economic and technological development		
		Air quality	Water quality and quantity	Soil condition	Other pollutants	Biodiversity	Quality of employment	Livelihood of the poor	Access to affordable and clean energy services	Human and institutional capacity	Quantitative employment and income generation	Balance of payments and investments	Technology transfer and technological self-reliance
GS 607	a[29]	+	o	o	o	o	+	o	o	o	+	+	o
	b[30]	+	+	+	o	o/+	+	o/+	+	o/+	o/+	o/+	o/+
	c[31]	+	o	o	o	o	+	o	o	o	+	+	o
	d[32]	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**
GS 662	a	+	o	o	o	o	+	o	o	o	+	o	o
	b	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	c	+	o	o	o	o	+	o	o	o	+	o	o
	d	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**
GS 682	a	+	+	o	o	o	+	o	+	o	+	+	+
	b	+	o	o	-	o	+	+	+	+	+	+	+
	c	+	+	o	o	o	+	o	+	o	+	+	+
	d	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**

[29] Result of the project developer's own initial SD Matrix scoring (detailed impact assessment)
[30] Result of local stakeholder's blind sustainability exercise.
[31] Consolidated sustainable development matrix.
[32] Indicates whether or not the consolidated sustainable development matrix has been changed by the result of the blind sustainability exercise.

GS 687	a	+	o	o	o	o	+	o	o	o	+	o	o
	b	+	o/+	o/+	o	o/+	+	o/+	+	o/+	o/+	o/+	o/+
	c	+	o	o	o	o	+	o	o	o	+	o	o
	d	no	no	no	no	no	no	no	no	no	no	no	no
GS 710	a	+	o	o	+	o	+	+	+	+	+	o	+
	b	+	o	o	o	o	o	+	+	o	+	o	o
	c	+	o	o	+	o	+	+	+	+	+	o	+
	d	no	no	no	no	no	no	no	no	no	no	no	no
GS 721	a	+	o	o	o	o	+	o	o	o	+	+	o
	b	+	o	o	o	o	o	+	o	+	+	o	o
	c	+	o	o	o	o	+	o	o	o	+	o	o
	d	no	no	no	no	no	no	no	no	no	no	yes	no
GS 725	a	+	o	o	o	-	o	+	+	+	+	+	+
	b	o	o	o	o	o	o	+	o	o	+	+	o
	c	+	+	o	o	-	o	+	+	+	+	+	o
	d	no	no	no	no	no	no	no	no	no	no	no	yes
GS 727	a	o	o	o	o	o	+	o	o	o	+	o	+
	b	o	o	o	o	o	+	o	o	o	+	o	+
	c	o	o	o	o	o	+	o	o	o	+	o	+
	d	no	no	no	no	no	no	no	no	no	no	no	no

GS 728	**a**	o	o	o	o	o	+	o	o	o	+	o	+
	b	o	o	o	o	o	+	o	o	o	+	o	+
	C	o	o	o	o	o	+	o	o	o	+	o	+
	d	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**
GS 746	**a**	+	+	o	o	o	o	o	+	o	+	o	+
	b	+	o	o	+	o	+	+	+	+	+	+	+
	c	+	+	o	o	o	o	o	+	o	+	o	+
	d	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**
GS 756	**a**	+	o	o	o	o	o	o	+	o	o	o	+
	b	+	o	o	o	+	+	+	+	+	+	o	+
	c	+	o	o	o	o	o	o	+	o	o	o	+
	d	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**
GS 761	**a**	+	o	o	o	o	+	o	o	o	+	o	o
	b	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	c	+	o	o	o	o	+	o	o	o	+	o	o
	d	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**
GS 765	**a**	o	o	o	o	o	o	o	+	o	+	+	o
	b	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	c	o	o	o	o	o	o	o	+	o	+	+	o
	d	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**

GS 768	**a**	+	+	+	+	o	+	+	+	+	+	+	o
	b	+	+	+	+	+	+	+	+	+	+	o	+
	c	+	+	+	+	o	+	+	+	+	+	+	o
	d	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**
GS 820	**a**	+	o	o	o	o	o	+	+	o	+	o	o
	b	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	c	+	o	o	o	o	o	+	+	o	+	o	o
	d	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**
GS 821	**a**	+	o	o	o	o	o	+	+	o	+	o	o
	b	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	c	+	o	o	o	o	o	+	+	o	+	o	o
	d	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**
GS 837	**a**	+	o	o	o	o	+	o	o	o	+	o	o
	b	+	o/+	o	o	o/+	+	+	+	o	+	o	o/+
	c	+	o	o	o	o	+	o	o	o	+	o	o
	d	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**
GS 849	**a**	+	+	+	+	o	+	+	+	+	+	+	o
	B	+	+	+	+	+	+	+	+	+	+	o	o
	c	+	+	+	+	o	+	+	+	+	+	+	o
	d	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**

GS 858	**a**	+	o	o	o	o	+	+	+	+	+	+	+
	b	+	o	+	o	+	+	+	+	+	+	o	+
	c	+	o	o	o	o	+	+	+	+	+	+	+
	d	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**
GS 859	**a**	+	o	o	o	o	+	+	+	+	+	+	+
	b	+	+	o	o	+	+	+	+	+	+	o	o
	c	+	o	o	o	o	+	+	+	+	+	+	+
	d	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**
GS 961	**a**	o	o	o	o	o	+	o	+	o	+	o	+
	b	o	o	o	o	o	o	o	+	+	+	o	+
	c	o	o	o	o	o	+	o	+	o	+	o	+
	d	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**
GS 980	**a**	+	o	o	+	o	+	+	+	+	+	+	+
	b	+	+	o	+	+	+	+	+	+	+	o	o
	c	+	o	o	+	o	+	+	+	+	+	+	+
	d	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**	**no**