Sustainable Governance in Voluntary Forest Carbon Standards

by

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B.Sc., University of Calgary, 2003

LL.B., University of Victoria, 2008

A Thesis Submitted in Partial Fulfillment for the Degree of

MASTER OF LAWS

in the Faculty of Law

University of Victoria

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ABSTRACT

This thesis explores the influence of governance arrangements on sustainability commitments contained within voluntary forest carbon standards. This exploration is achieved through the application of a two-stage governance and sustainability analysis, which is an amalgamation of analytical tools originating in the "new governance" literature and the sustainability assessment literature. First, each voluntary forest carbon standard is examined in terms of its institutional, political and regulatory dimensions, using a framework adopted from the new governance literature. Second, the sustainability commitments contained within each of the voluntary forest carbon standards are assessed comparatively, using criteria adopted from the sustainability assessment literature. Following this, the results of the two-stage analysis are used to consider and discuss the relationship between governance and sustainability. The voluntary forest carbon standards reviewed in this analysis are the Verified Carbon Standard, the Climate, Community and Biodiversity Standard, Plan Vivo and CarbonFix.

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CHAPTER 1: THE ROLE OF FORESTS IN MITIGATING CLIMATE CHANGE

PART I: INTRODUCTION

The potential for forests to mitigate climate change is enormous. The primary mechanism through which forests contribute to climate change mitigation is the removal of carbon dioxide from the atmosphere. Increasingly, forest carbon removal activities are linked with forest projects operating for the purpose of generating carbon offsets. The offsets generated by forest carbon projects can then be offered for sale, with most sales currently occurring in the voluntary carbon market (VCM). VCM forest carbon projects are certified by several different voluntary forest carbon standards. These standards vary in terms of their individual governance arrangements, carbon accounting techniques and sustainability commitments. The purpose of this thesis is to explore the influence of governance arrangements on the sustainability commitments of forest carbon standards within the VCM.

PROJECT OUTLINE

The central inquiry of this thesis is whether, and how, governance arrangements influence the existence and content of articulated sustainability commitments in voluntary forest carbon standards. The influence of governance arrangements on sustainability commitments in the context of VCM forest standards is explored using a two-stage analysis. First, I use a governance framework to examine the governance of each voluntary forest carbon standard from institutional, political and

regulatory perspectives. Second, I comparatively assess the sustainability commitments contained within each of the standards. In order to assess the sustainability commitments of each standard, I consider whether each standard contemplates and articulates commitments to the promotion of sustainability through the use of particular sustainability assessment criteria. I then consider the manner in which each standard incorporates the sustainability criteria, as well as how each standard ensures that these commitments are fulfilled in certified projects. Following this, I explore the relationship between governance attributes and sustainability commitments among and between the selected standards, with an eye to uncovering evidence of similarities and differences, as well as the emergence of patterns and trends across the two stages of analysis. In the resulting discussion, I explore the relationships and influences of governance on sustainability commitments.

This thesis is organized into five chapters. The purpose of this first chapter is to introduce the intersections between forests and climate change (Part II); the way in which forests are incorporated into the international climate change regime (Part III); an overview of carbon markets and their role in climate change mitigation (Part IV); and some positive aspects and critiques of voluntary carbon markets and standards (Part V).

In Chapter 2, I introduce the "new governance" and sustainability assessment literatures. In this chapter, I also explain how governance and sustainability intersect and how this intersection links back to the criticisms of the voluntary

market as set out in Chapter 1. Chapter 2 also contains a detailed description of the origin, features and application of the two-stage governance and sustainability analysis used in the investigation of voluntary forest carbon standards. The governance framework is an investigative tool for comparative exploration of governance arrangements according to three distinct, but interrelated, dimensions: institutional, political and regulatory. Meanwhile, the sustainability assessment is a tool for comparatively assessing the content and quality of each standard's articulated commitments to the promotion of sustainability, as well as accompanying mechanisms for assuring that the commitments are fulfilled.

In Chapter 3, I introduce and describe each of the four voluntary forest carbon standards selected as case studies. The history, organization and sustainability details of each of the standards (Verified Carbon Standard, Climate, Community and Biodiversity Standard, Plan Vivo and CarbonFix) are set out in preparation for the analysis in Chapter 4.

Chapter 4 contains my analysis of the case studies in accordance with the governance and sustainability analysis described in Chapter 2. Using the governance framework, adopted from the "new governance" literature, I explore each of the voluntary forest carbon standards' institutional, political and regulatory characteristics, both individually and comparatively. I also consider relationships that may exist across these three dimensions of governance. In the sustainability assessment, I comparatively assess the performance of each of the voluntary forest carbon standards' articulated commitments to the promotion of sustainability by

applying sustainability assessment criteria. In addition, as part of the sustainability assessment, I comparatively consider each standard's incorporation of credible carbon accounting criteria. The goal of this two-stage analysis is to discover whether, and how, governance arrangements influence the articulation of sustainability commitments in voluntary forest carbon standards.

Finally, in Chapter 5, I offer observations and conclusions about the results of the analysis contained in Chapter 4. In particular, this discussion considers results that emerge from the governance and sustainability analysis, with the intention of uncovering affinities that may exist between the presence of particular governance attributes and the quality of accompanying commitments to sustainability criteria. The overarching goal of this chapter is to reconsider the central issue in this thesis, namely the influence of governance arrangements on sustainability commitments within voluntary forest carbon standards.

PART II: CLIMATE CHANGE AND FORESTS

Increasingly, forests and forest management are occupying significant space in climate change negotiations, policy, research and scholarship.[1] This reflects the inextricable link between climate change and forests, in terms of both mitigation

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[1] See, for example Charlotte Streck, *et al*., *Climate Change and Forests: Emerging Policy and Market Opportunities* (London: Chatham House, 2008); N.H. Ravindranath, "Mitigation and Adaptation Synergy in Forest Sector" (2007) 12 Mitigation and Adaptation Strategies for Global Change 843; Josep Canadell & Michael Raupach, "Managing Forests for Climate Change Mitigation" (2008) 320:5882 Science 1456; Sandra Brown, "Forests and Climate Change: Role of Forest Lands as Carbon Sinks" Technical Paper (Corvallis, OR: National Health and Environmental Effects Research Lab, 1997).

and adaptation.[2] Forests, which cover about 30% of the earth's land surface,[3] provide a livelihood for millions of people. They also support at least 80% of terrestrial biodiversity and play a central role in climatic and hydrological cycles.[4] Forests possess enormous potential to mitigate climate change impacts when managed aptly.[5] In contrast, however, forests also possess enormous potential to exacerbate the negative impacts of climate change when not managed appropriately.[6]

COMBATING CLIMATE CHANGE: MITIGATION AND ADAPTATION

Mitigation refers to the ability of forests to counteract climate change when they are managed properly. Climate change mitigation can occur because forests are able to capture carbon dioxide,[7] which is stored in both soil and vegetation.[8] Forests

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[2] Ravindranath, *supra* note 1.

[3] Eliasch, Johan. *Climate Change: Financing Global Forests* (London: Earthscan, 2008) at 15.

[4] F. Ali, *et al*. *Reducing Emissions from Deforestation and Forest Degradation: Proposed Implementation of REDD+ via the Copenhagen Accord* (Fall 2010 Workshop in Applied Earth System Management, Columbia University, School of International and Public Affairs, 8 December 2010) at 3.

[5] IPCC. *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: IPCC, 2007) [IPCC 2007]; Canadell, *supra* note 1. See also Brown, *supra* note 1 at 117; Michael Dutschke, *Forestry Risk and Climate Policy.* (Göttingen: Cuvillier Verlag, 2010) at 1-3; Jeremy Rayner, Alexander Buck & Pia Katila, eds., *Embracing Complexity: Meeting the Challenges of International Forest Governance: A Global Assessment Report*. Prepared by the Global Forest Expert Panel on the International Forest Regime. IUFRO World Series Volume 28 (Vienna: IUFRO, 2010) at 48 [IUFRO].

[6] Brown, *supra* note 1 at 117-118; IUFRO, *supra* note 5 at 48.

[7] Canadell, *supra* note 1 at 1456.

[8] Brown, *supra* note 1 at 117.

remove carbon from the atmosphere and store it both above and below ground,[9] sequestering more carbon per hectare than any other type of land cover.[10] According to the Food and Agriculture Organization of the United Nations (FAO), the world's forests and forest soils currently store more carbon than the amount in the atmosphere.[11] Forest management activities such as restoration, preventing deforestation, afforestation and reforestation of unforested lands are common mitigation actions.[12] While the mitigation potential of these activities varies by both activity and region, modelling predicts global forest mitigation potential of 13.8 $GtCO_2$ per year by 2030.[13]

Adaptation in forest governance refers to the management of forests to minimize devastating climate change impacts on forests. Forest management to maximize adaption to climate change is extremely important[14] because, as climate change occurs, the seasonal growth cycles, locations and hardiness of tree species will be

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[9] Eliasch, *supra* note 3 at 16.

[10] IPCC. *IPCC Guidelines for National Greenhouse Gas Inventories, Prepared by the National Greenhouse Gas Inventories Programme,* IPCC/IGES, (Hayama, Japan: IPCC, 2006); R.A. Houghton, "Balancing the Global Carbon Budget" (2007) 35 Annual Review of Planetary Sciences 313, online: <earth.annualreviews.org>.

[11] FAO. *State of the World's Forests 2011*. (Rome: Food and Agriculture Organization of the United Nations, 2011) at 58 [FAO 2011].

[12] Eliasch, *supra* note 3 at 20.

[13] Gert Nabuurs, *et al*., *Forestry in Climate Change 2007: Mitigation.* Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (Cambridge: Cambridge University Press, 2007) at 543.

[14] FAO 2011, *supra* note 11 at 58.

altered.[15] Important forest management activities include: promotion of reforestation through species facilitated migration; conservation of genetic diversity through the facilitation of migration of tree species and genotypes; maintenance of species productivity, such as favouring drought tolerant species in drought prone areas; and promotion of forest health, including the development of genotypes that are drought tolerant and resistant to insects and disease.[16]

While forest migration and adaptation are synergistic and complementary,[17] this thesis is primarily concerned with forest mitigation. Generation of carbon offsets through forest carbon projects is generally considered to be a type of forest mitigation activity. Despite this, there are some adaptation implications for forest carbon offsets, as climate-induced changes occur at the forest level. For example, mitigation activities need to be designed to ensure that they do not increase the vulnerability of forests to climate change. As well, adaptation practices can be incorporated into mitigation projects to help ensure that they reduce vulnerability and promote adaptation.[18]

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[15] M. Johnston, *et al*., "Climate Change Impacts and Adaptation Strategies for the Forest Sector in Canada" (Paper presented at the 2nd Climate Change Technology Conference, Hamilton, Ontario, 12-15 May 2009).

[16] T.C. Lemprière, *et al*., 'The Importance of Forest Sector Adaptation to Climate Change' (Edmonton, AB: Natural Resources Canada, 2008).

[17] Michael Mastrandrea, *et al*., "Bridging the Gap: Linking Climate-impacts Research with Adaptation Planning and Management" (2010) 100 Climatic Change 87; Ravindranath, *supra* note 1.

[18] Ravindranath, *supra* note 1.

EXACERBATING CLIMATE CHANGE

Forests are a vital part of climate change solutions; however, human interaction with forests is also a major source of climate change-inducing emissions.[19] Forest management decisions significantly affect forests' abilities to capture and sequester carbon, with deforestation and degradation seriously undermining this ability.[20] For instance, deforestation remains one of the largest contributors to greenhouse gas (GHG) emissions, particularly in developing countries.[21] Deforestation contributes to land degradation and loss of ecosystem services[22] accounting for more than 20% of global emissions, or 5.8 $GtCO_2$, annually,[23] with approximately 96% of this occurring in tropical developing countries.[24] This emissions figure could increase substantially, depending on the manner in which deforestation occurs[25] and the use(s) to which deforested land is put.[26] Poor forest management

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[19] Dutschke, *supra* note 5 at 1-3; Nabuurs, *supra* note 13 at 541-584; Brown, *supra* note 1.

[20] Eliasch, *supra* note 3 at 19-20; Brown, *supra* note 1 at 122.

[21] FAO. *Global Forest Resources Assessment 2005: Progress towards Sustainable Forest Management* (Rome: Food and Agriculture Organization of the United Nations, 2006) at 195; Eliasch, *supra* note 3 at 7; Ali, *supra* note 4 at 7.

[22] C. Cangir & D. Boyraz, "Climate Change and Impact of Desertification or Soil/land Degradation in Turkey: Combating Desertification" (2008) 5 Journal of Tekirdag Agricultural Faculty at 169.

[23] $GtCO_2$ refers to gigatonnes of carbon dioxide or carbon dioxide equivalent (CO_2e) green house gas emissions using the metric ton as the scale of measurement.

[24] Eliasch, *supra* note 3 at 15.

[25] For example, slash and burn clearing of land causes immediate release of stored carbon from the vegetation, particularly in tropical peat forest areas. See Hans Joosten & John Couwenberg, "Peatlands and Carbon" in F. Parish, *et al*., eds., *Assessment on Peatlands, Biodiversity and Climate Change: Main Report* (Kuala

decisions that lead to deforestation and degradation can also cause other problems that contribute to climate change, many of which are linked to decreased canopy cover, such as increased susceptibility to fire,[27] runoff problems, soil erosion and damage to remaining vegetation.[28]

In addition to human-induced forest destruction, forests are highly susceptible to climate-induced devastation; climate change stresses forests through higher temperatures, altered precipitation patterns and more frequent and extreme weather events.[29] Climate change also increases the intensity of catastrophic forest events, such as forest fires, disease and infestations.[30] Modelling shows that forest emissions will cause $1 trillion in climate change impacts per year by 2100.[31]

Meanwhile, afforestation, restoration and reforestation work to enhance and increase carbon capture and sequestration, thus demonstrating the need to harness the carbon reduction capacity of global forests, rather than allowing emissions to run unchecked. Forest management, under the auspices of forest carbon projects

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Lumpur: Global Environment Centre and Wageningen: Wetlands International, 2008) at 99-117. Meanwhile, clear-cut logging causes the release of 40-60% of stored carbon, primarily from vegetation. See Daniel Nepstad, *et al.* "Large-scale Impoverishment of Amazonian Forests by Logging and Fire" (1999) 398 Nature 505 [Nepstad 1999].

[26] Eliasch, *supra* note 3 at 19.

[27] Nepstad 1999, supra note 25.

[28] Daniel Nepstad, *et al*. "The Role of Deep Roots in the Hydrological and Carbon Cycles of Amazonian Forests and Pastures" (1994) 372 Nature 666.

[29] Ravindranath, *supra* note 1.

[30] *Ibid.*

[31] Eliasch, *supra* note 3 at 28.

within the VCM, is one mechanism which has the potential to help ensure that forests mitigate, rather than contribute to, negative climate change impacts.

PART III: INTERNATIONAL CLIMATE CHANGE REGIME

The cornerstone of the international response to climate change is the United Nations Framework Convention on Climate Change (UNFCCC).[32] This treaty is a broad and unique multilateral environmental agreement formed under the umbrella of the United Nations. The treaty constitutes recognition that the climate system is a shared resource, the stability of which can be affected by industrial and other greenhouse gas emissions.

The regime emerged with a framework convention (UNFCCC) and accompanying protocol (Kyoto).[33] Ratification of the convention and protocol are discrete voluntary actions, meaning that ratification of the convention does not necessarily mean ratification of the protocol. However, once a state has committed itself to an

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[32] Intergovernmental Negotiating Committee for a Framework Convention on Climate Change, *The United Nations Framework Convention on Climate Change* (1992) OR, 5th Sess., Annex, UN Doc. A/AC.2371/18 (Part II)/Add. 1 (1992), 31 I.L.M. 849, online, UNFCCC <http://unfccc.int/resource/docs/convkp/conveng.pdf> [UNFCCC].

[33] UNFCCC Secretariat, *Kyoto Protocol to the UN Framework Convention on Climate Change* (Bonn, Germany: UNFCCC Secretariat, 1997), online, UNFCCC <http://www.unfccc.de/fccc/docs/cop3/protocol.html> [Kyoto Protocol]. The pre-Kyoto negotiations were undertaken with the goal of establishing legally binding targets for Annex I countries. These targets were established through negotiation, rather than prescription. Non-Annex I countries were not subject to targets. The Kyoto Protocol to the UNFCCC was prepared in 1997 and came into force in 2005. The detailed rules for its implementation, called the "Marrakesh Accords" were adopted at COP 7 in Marrakesh, Morocco in 2001. The main feature of the Protocol is the commitment to binding GHG emissions reduction targets for 37 Annex 1 nations and the EU. The reduction commitments constitute a 5% reduction on average during the commitment period (2008-2012), compared to 1990 levels.

emissions reduction target under the Kyoto Protocol, it becomes subject to binding compliance and enforcement systems. This aspect of the Kyoto Protocol is relatively unique within multi-lateral environmental agreements. The Protocol places a heavier burden on developed nations under the principle of "common but differentiated responsibilities" in recognition of the fact that the industrial activities of developed countries are principally responsible for the current high levels of anthropogenic GHG emissions.[34]

The concept of carbon offsets as a mechanism for mitigation of climate change can be traced back to the Kyoto Protocol,[35] which is an agreement by which states[36] agree to reduce their emissions by an average of 5.2% below 1990 levels in the period 2008-2012.[37] The Kyoto Protocol created three mechanisms to meet reductions commitments, including Emissions Trading, Joint Implementation and the Clean Development Mechanism (CDM). Each of these mechanisms is described in **Table 1**.[38] These mechanisms allow industrialized nations to meet emissions reduction commitments through the reduction of emissions within their own nations, in developing countries or in countries with economies in transition. The

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[34] UNFCCC, *supra* note 32.

[35] *Ibid*.

[36] The term 'Annex I' refers to those primarily industrialized states listed in Annex I of the Kyoto Protocol that have agreed to emissions reduction targets, *supra* note 33. In contrast, states listed in Annex II are not subject to binding emission reductions; any reductions undertaken by these states are strictly voluntary.

[37] Tim Williams, *Climate Change Negotiations: The United Nations Framework Convention on Climate Change, the Copenhagen Accord and Emissions Reductions Targets* Publication No. 2010-29-E (Ottawa: Library of Parliament, 2010) at 1.

[38] Kyoto Protocol, *supra* note 33.

rationale for permitting this type of geographically distant emissions reduction is that "because greenhouse gases tend to mix throughout the global atmosphere, carbon reductions may occur anywhere and still reduce overall concentrations with no relation to national boundaries."[39] In this way, the Kyoto Protocol mechanisms are intended help to finance low carbon development in developing countries. As well, the cost of emissions reduction becomes more economically viable and politically palatable for industrialized nations to achieve.[40]

Table 1: KYOTO PROTOCOL FLEXIBILITY MECHANISMS

FLEXIBILITY MECHANISMS
EMISSIONS TRADING Parties to the Kyoto Protocol Emissions are subject to emissions reduction targets (caps). Under this regime, parties are allocated assigned amount units (AAUs), which are essentially carbon credits reflecting the amount of emissions permitted for each party. Emissions trading allows parties to buy and sell, with one another, their excess AAUs.
JOINT IMPLEMENTATION Joint implementation allows Kyoto Protocol parties to achieve their targets through the purchase of carbon credits, called emissions reduction units (ERUs), from GHG reduction projects in other developed countries or countries with economies in transition.
CLEAN DEVELOPMENT MECHANISM The clean development mechanism allows Kyoto Protocol parties to implement emissions reduction projects in developing countries. The credits generated, called certified emissions reductions (CERs), can be counted towards Kyoto commitments.

[39] Adam Bumpus & Diana Liverman. "Accumulation by Decarbonization and the Governance of Offsets" (2008) 84:2 Economic Geography 127 at 133.

[40] *Ibid.* at 128.

Within the international climate regime, forest protection and forest management are important aspects of the intergovernmental plan for addressing anthropogenic contributions to climate change. With respect to forest-related articles, the Kyoto Protocol presents a mixture of voluntary and mandatory provisions. For example, implementation of article 3.3 is mandatory for all Annex I states. Meanwhile, article 3.4 is voluntary. Kyoto Protocol articles 3.3 and 3.4 relate to the domestic forest practices of Annex I states, specifically GHG emissions by sources and removals by sinks that result from land use, land-use change and forestry (LULUCF).[41]

Article 3.3 of the Kyoto Protocol is mandatory and refers only to human-induced afforestation, deforestation and reforestation activities that occur within the first commitment period (2008-2012).[42] This provision incentivizes forest cover maximization for Annex I states between 2008 and 2012. In contrast, article 3.4 is a voluntary program for Annex I states, related to the acquisition of credits for additional human-induced changes resulting from land management activities that have occurred since 1990, including forest management.[43] This provision allows Annex I countries to choose to include the carbon effects of managing existing forests in their national greenhouse gas inventories. In some countries, the potential for credit-generation through increased sequestration due to forest

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[41] UNFCCC Secretariat, "LULUCF under the Kyoto Protocol: Background", online: UNFCCC <http://unfccc.int/methods_and_science/lulucf/items/4129.php> [UNFCCC Secretariat].

[42] Meinhard Doelle, *From Hot Air to Action? Climate Change, Compliance and the Future of International Environmental Law* (Toronto: ThomsonCarswell, 2005) at 44.

[43] UNFCCC Secretariat, *supra* note 41.

management is significant. The carbon credits generated through increased sequestration due to forest management activities can be used to fulfill Kyoto commitments. This means states that are well positioned with respect to article 3.4 can undertake fewer emissions reduction activities, purchase fewer carbon credits, and possibly sell excess carbon credits in the international market.

More recently, a mechanism for reducing emissions from deforestation and forest degradation (REDD) was introduced to the UNFCCC regime as a key element in the post-2012 framework (as described by the Bali Roadmap).[44] The potential of the REDD mechanism appeals to countries with extensive deforestation. There has since been additional work on this mechanism to further extend its appeal through REDD+[45], which would include three additional carbon actions: conservation, management of forests and human-induced increases in forest carbon stocks.[46] The addition of these activities will allow countries that are already working effectively towards forest protection to benefit as well.

In addition to the mechanisms created by the UNFCCC, there has been a rapid proliferation of voluntary carbon standards purporting to provide environmentally

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[44] REDD became a part of the international regime at the 2007 UNFCCC Conference of the Parties (COP 13) in Bali, Indonesia.

[45] REDD+ emerged at COP 14 in Poznań, Poland.

[46] Eduard Merger, Michael Dutschke & Louis Verchot, "Options for REDD+ Voluntary Certification to Ensure Net GHG Benefits, Poverty Alleviation, Sustainable Management of Forests and Biodiversity Conservation" (2011) 2 Forests 550 at 551; C. Parker, *et al*. *The Little REDD+ Book* 2nd ed. (Oxford: Global Canopy Foundation, 2009).

sound forest carbon offsets. The offsets generated by these standards for sale on the VCM include "a range of products, certified to a wide array of standards."[47]

PART IV: CARBON MARKETS

Outside of the Kyoto Protocol, carbon markets are used to facilitate the purchase and sale of carbon offsets (see **Table 2** for terminological definitions). An offset is "an intangible economic commodity that represents the avoidance or sequestration of GHG emissions."[48] In this context, carbon offsets originate either through allocation from a regulatory agency or government, or are generated through emissions reduction programs and projects.[49] Each carbon offset represents GHG reductions equivalent to one metric tonne of carbon dioxide equivalent (tCO_2e).[50] Carbon offsets play an important role in a comprehensive approach to climate change. Carbon offset programs allow the possibility of undertaking positive greenhouse gas reduction actions in places where economic burdens are the lowest.[51] As mentioned previously, the geographic source of GHG emissions is

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[47] Ricardo Bayon, Amanda Hawn & Katherine Hamilton. *Voluntary Carbon Markets* (London: Earthscan, 2007) at 12.

[48] Michael Gillenwater, *et al*. "Policing the Voluntary Carbon Market" (2007) 6 Nature Reports Climate Change at 85, online: Nature <http://www.nature.com/climate/2007/0711/full/climate.2007.58.html>.

[49] Bayon, *supra* note 47 at 4.

[50] *Ibid.*

[51] While making carbon reductions at the lowest cost seems positive, it is a complicated issue. The term "carbon colonialism" is often used to refer to carbon-offset projects that occur in the developing world and provide no benefit to the local community. Some projects are even socially and environmentally detrimental. For further elucidation of the concept and arguments associated with this term, see Heidi Bachram. "Climate Fraud and Carbon Colonialism: The New Trade in Greenhouse Gases" (2004) 15:4 Capitalism, Nature, Socialism 5.

irrelevant to their impact on climate. This means that carbon offsets are a "global, rather than local, public good and can be traded in a global market."[52] In this way, "carbon emissions are emerging as a new and dynamic commodity that links the North and South."[53] As well, "offsets have the potential to deliver sustainability co-benefits, to spur technology development and transfer, and to develop human and institutional capacity for reducing emissions in sectors and locations not included in a cap-and-trade or a mandatory government policy."[54] However, not all offsets reach this potential.

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[52] Gillenwater, *supra* note 48.

[53] Bumpus, *supra* note 39 at 128.

[54] Anja Kollmuss, Helge Zink & Clifford Polycarp, *Making Sense of Voluntary Carbon Markets: A Comparison of Carbon Offset Standards* (Frankfurt: World Wildlife Fund, 2008) at 1 [Kollmuss 2008].

Table 2: CARBON MARKET TERMINOLOGY

TERMINOLOGY
Carbon Offsets neutralize GHG emissions through removal of an equivalent amount of GHG from the atmosphere or prevention of emission release (this is referred to as avoidance).
Carbon Standard refers to the rules and procedures surrounding certification of particular carbon offset projects in the voluntary carbon market. For example, the Verified Carbon Standard certifies carbon offsets generated through voluntary projects that have met its criteria.
Carbon Trading refers to the purchase and sale of carbon offsets.
Baselines refer to the reference point against which future emissions reductions or carbon sequestration are measured.
Additionality refers to the requirement that GHG emissions reductions must be additional to those that would have occurred without the project (i.e. business as usual).
Monitoring and Verification refers to the authentication of GHG reductions based on calculations of baseline emissions and subsequent emissions reductions and describes the activities that should take place to ensure there is ongoing and independent measurement and oversight of the project's activities, progress, and impacts. A third-party verifier should perform verification.
Leakage refers to the increase in emissions that might result from a project. Internal leakage refers to the loss of emissions benefits related to a project due to increased emissions generation at a different site controlled by the same proponent. External leakage refers to the loss of emissions benefits related to a project due to an increase in emissions outside of the proponent's control.
Permanence refers to the permanent removal or reduction of GHG emissions and addresses the length of time carbon stocks must be maintained, if measures will be taken to help prevent carbon loss, and what measures will be taken if carbon loss does occur.
Real refers to the requirement that GHG reductions must have actually occurred prior to the generation and sale of the offset.
Transparency addresses the availability of project methodologies, data, and documents to a project verifier and other third parties, including the public.
Unique refers to the credits generated being counted only once. A credit is generated one time, sold one time, claimed one time and retired.

There are essentially two types of carbon markets, the regulatory/compliance market and the voluntary market. The compliance market is comprised of allowance-based transactions. This means that all carbon offsets (allowances) that

can be traded must be approved or allocated by a regulator and are subject to an overall cap; this is referred to as a "cap-and-trade system".[55] The compliance market is associated with the Kyoto Protocol's three flexibility mechanisms (**Table 1**).[56] As well, the Kyoto Protocol provides the foundation for most of the regulated cap-and-trade markets that have emerged.[57] The VCM operates entirely outside of the Kyoto regime, transacting different kinds and qualities of carbon offsets. For instance, most of the offsets traded in the VCM are project-based, meaning that they result from particular offset projects.[58] In contrast to the Kyoto regime, the VCM is not subject to an overall cap. Instead, the VCM operates on a baseline and credit system, meaning that carbon emissions reductions that occur beyond the "business as usual" baseline can be used to generate carbon offsets.

The VCM has emerged parallel to Kyoto, catering to those companies and individuals who want to go beyond Kyoto commitments, or whose governments are not signatories to the Kyoto Protocol.[59] According to a recent report, the voluntary carbon markets transacted 131.2 $GtCO_2$ in 2010, a 34% increase over the previous

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[55] Bayon, *supra* note 47 at 5.

[56] Terminology defined in Table 1 originates from a variety of sources including: Anja Kollmuss, *et al*. *Handbook of Carbon Offset Programs: Trading Systems, Funds and Standards* (London: Earthscan, 2010) at 213- 223 [Kollmuss 2010]; Kollmuss 2008, *supra* note 54 at vii-ix; World Wildlife Fund, *Forest Carbon Standards: A WWF Assessment Guide* (Frankfurt: WWF, 2010) at 13-16, online: World Wildlife Fund <http://wwf.panda.org/what_we_do/footprint/climate_carbon_energy/forest_climate/publications/?193463/WWFs-Review-of-Forest-Carbon-Standards> [WWF]; Julie Beane, *et al*. *Forest Carbon Offsets: A Scorecard for Evaluating Project Quality*. (Brunswick, Maine: Manomet Center for Conservation Sciences, 2008) at 19-21.

[57] Bayon, *supra* note 47 at 6.

[58] *Ibid.* at 5.

[59] Bumpus, *supra* note 39 at 132.

year, with more than 40% of transactions being forest carbon credits.[60] Much like the Kyoto Protocol flexibility mechanisms, the VCM has tended towards the generation of offsets in developing countries. There are multiple rationales for the location of offset projects in developing regions. Like many other resources, they can be expensive in developed states and are frequently easier and cheaper to obtain in the developing world, because: industrial processes are less efficient; implementation of clean energy systems is less costly; and labour and land are less expensive.[61] However, despite some obvious economic benefits of locating offset projects in the developing world, there are multiple criticisms of the geographic imbalance in carbon-offset generation. Some of these criticisms are discussed in Part V.

While carbon markets are seen as important tools in a comprehensive international approach to climate change, the use of carbon offsets predates the UNFCCC, Kyoto Protocol and the origin of regulated carbon markets.[62] AES Corporation, an American electricity company, first used carbon offsets in 1989. This involved AES making a voluntary investment in a Guatemalan agro-forestry project in which farmers were paid to plant 50 million trees to offset the GHG emissions from

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[60] Molly Peters-Stanley *et al.* "Back to the Future: State of the Voluntary Carbon Markets 2011" (2 June 2011), online: (2011) Ecosystem Marketplace & Bloomberg New Energy Finance at 9. <http://www.forest-trends.org/documents/files/doc_2828.pdf>

[61] Bumpus, *supra* note 39 at 133.

[62] Bayon, *supra* note 47 at 11.

electricity production.[63] This project is hailed as the origin of the VCM. Since then, numerous forest carbon projects have been undertaken voluntarily. The role played by carbon offset-generating forest projects in voluntary market-based climate solutions is expanding, with emission reductions from deforestation and degradation generating 29% of credits transacted in the VCM in 2010.[64] This may be due to the relatively lower cost of reducing forest emissions as compared with abatement costs in other sectors.[65]

PART V: COMMENTARY ON THE VOLUNTARY CARBON MARKET

The VCM allows for climate change mitigation to occur at multiple sites outside of state-regulated regimes or international agreements. In this way, climate change mitigation through the generation of carbon offsets can occur more broadly and rapidly, with lower transaction, administration and negotiation costs. There are a number of rationales for companies to engage in voluntary carbon reduction activities, including philanthropy, marketing, efficiency and tax rebates. The voluntary market allows motivated entities to go beyond the commitments set out in international agreements. Furthermore, it allows for mitigation actions to occur in jurisdictions that have not undertaken emissions reduction commitments.[66] The

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[63] *Ibid.*

[64] Peters-Stanley, *supra* note 60 at iv.

[65] Nicholas Stern. *The Economics of Climate Change: The Stern Review* (Cambridge: Cambridge University Press, 2007).

[66] For example, many offset-generating projects are located in the developing world, where emissions reduction commitments are not yet applicable. Furthermore,

voluntary market does not infringe on state sovereignty, allowing each state to regulate projects within its jurisdictional boundaries. As well, the VCM provides a flexible space for innovation and experimentation in areas not covered by international agreements.[67] The voluntary market also can reduce transaction costs such that projects, which may be too small to obtain CDM or other Kyoto-mechanism approvals, can proceed nonetheless.[68] Finally, forest carbon projects may provide incentives for the reduction of illegal logging activities, due to alternative income generation streams from forested lands.[69]

The rise of voluntary carbon markets and standards has been clouded by a concomitant rise in criticism regarding the sustainability of offsets generated under some standards. In particular, forest carbon projects certified for the voluntary market have often been criticized as unsustainable. This discussion will, for the most part, focus on social and environmental sustainability criticisms that are relevant to voluntary forest carbon standards. There are several criticisms that reflect these concerns. Most of these criticisms relate to the concept of

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persons or entities in jurisdictions such as the United States that did not ratify the Kyoto Protocol purchase many of the offsets sold in the voluntary market.

[67] For example, the VCS has a mechanism f or financially compensating innovation through its methodologies compensation mechanism.

[68] For example, Plan Vivo Standards specifically cater to very small projects that would not qualify for certification by the mandatory market mechanisms.

[69] For example: "In August 2008, Australia announced a US$13.7 million fund for Asia-Pacific nations, the Asia-Pacific Forestry Skills and Capacity Building Program, to help tackle climate change by assisting countries in the region with forest management, combating illegal logging and boosting carbon storage in their forests." See Illegal-logging.info. *Australia,* online: Illegal-logging.info <http://www.illegal-logging.info/approach.php?a_id=109>.

commodification. It is important to note that the criticisms set out below are outlined without judgment, engagement or analysis. The veracity and value of these criticisms will be fully considered in the context of the case studies and analysis in the final chapter.

In order for carbon markets to operate, carbon removal services performed by forests must be commodified. "Commodification" means to turn some activity, service or thing into a commodity, or otherwise treat it as such. In other words, to commodify is to value something in monetary terms.[70] In the context of forest carbon offsets, this means that a particular aspect of the ecosystem services provided by forested lands is singled out for commodification. Carbon removal, as a service provided by forested lands, is valued in monetary terms, counted, registered and sold. In this way, forest carbon is linked to market power.[71] However, forests provide a very broad range of other ecosystem services as well, and some claim that "[c]onflict between maximising the carbon sequestration potential of forests and other forest values is becoming increasingly heated."[72]

Commodification of carbon removal services extracts or unbundles this particular service from the others. Questions then arise as to what exactly is owned and who

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[70] Ulrich Hampicke. "The Limits to Economic Valuation of Biodiversity" (1999) 26:1 International Journal of Social Economics 158 at 159.

[71] IUFRO, *supra* note 5 at 81.

[72] IUFRO, *supra* note 5 at 78; David Humphreys. "The politics of 'Avoided Deforestation': Historical context and contemporary issues" (2008) 10:3 International Forestry Review 433.

owns it. For example, one entity could own the land that the forest occupies. Another could own the right to harvest the timber from that same forest. Still others could possess harvesting rights for non-forest resources on the same land. Meanwhile, yet another entity could own the rights to sell the carbon offsets generated. However, this determination may become complex and fraught with justice and sustainability considerations as these discrete property rights begin to conflict with one another.[73] As one recent report notes, "[u]ncertain tenure is a pervasive problem in many forest areas, affecting who may participate in and benefit from forest carbon projects."[74] Thus, there is a need for carbon regulation, or contracts, which set out the rights and responsibilities for forest carbon projects, so that parties can be clear about what is owned and by whom.[75]

As mentioned previously, many criticisms of the VCM are related to commodification concerns. The first group of criticisms described relates to the credibility/quality of commodification, and the second group relates to some of the drawbacks associated with commodification. As these criticisms will be referred to in subsequent chapters, each has been assigned a number (one through seven) for

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[73] Margaret Skutsch. "Reducing carbon transaction costs in community based forestry management" (2005) 5 Climate Policy 433; Diana Liverman. "Who Governs, at What Scale and at What Price? Geography, Environmental Governance, and the Commodification of Nature" (2004) 4 Annals of the Association of American Geographers 94.

[74] Katherine Hamilton *et al.* "State of the Forest Carbon Markets 2009: Taking Root and Branching Out" (January 2010), online: (2010) Ecosystem Marketplace at 21. <http://www.forest-trends.org/publication_details.php?publicationID=2384>

[75] David Takacs. *Forest Carbon: Law and Property Rights* (Arlington, VA: Conservation International, 2009) at 13.

ease of future reference. The first group of criticisms includes numbers one through three, and the second group includes criticisms four through seven.

The first group of criticisms relates to a purported "lack of common rules, transparent procedures and overall rigour" [76] that has lead to credibility concerns regarding VCM offsets:

1. There is no benchmark against which emergent standards can be measured.
2. There is no oversight to ensure or measure the quality of offsets generated by voluntary standards.
3. The voluntary carbon market lacks uniform rules, clear standards, transparency, and registration requirements.[77]

The second group of criticisms reflects commodification drawbacks related to VCM sustainability:

4. Offsets are often generated in developing countries and offer no benefits to local communities.[78] This criticism is tied to the concept of "carbon colonialism".[79]
5. Environmental impacts, such as biodiversity losses associated with offset

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[76] Kollmuss 2010, *supra* note 56 at 4.

[77] *Ibid.;* Bayon, *supra* note 47 at 12.

[78] See for example, Kollmuss 2008, *supra* note 54; W.N. Adger, *et al*. "Advancing a Political Ecology of global Environmental Discourses" (2001) 32 Development and Change 681.

[79] See, for example, Bachram, *supra* note 51 at 6-8.

projects are not adequately considered.

6. Higher "quality" standards generate more expensive carbon offsets.
7. The VCM provides "moral cover" for the "destructive consumption ethic, which literally drives the fossil fuel economy."[80]

Many of these criticisms apply simultaneously to particular forest carbon projects that occur in the form of monoculture plantations of rapidly growing non-native species, some of which are later harvested through logging activities.

The first three criticisms can be grouped together, as they are interrelated and have common solutions. In order for offsets to be legitimate, they "must result in no net increase in atmospheric GHG levels."[81] In order to ensure the "technical legitimacy" of credits generated for sale on the voluntary market, issues such as additionality, permanence, leakage, quantification and verification must be adequately addressed (see **Table 2**). Critics argue that, where buyers cannot easily evaluate the quality of a commodity, there is a need for quality assurance mechanisms.[82] Without such mechanisms, competitive pressures can result in minimized quality and limited transparency.[83]

The first criticism is that there is no standard against which emergent standards can be measured. The voluntary market is characterized by a lack of regulation and

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[80] *Ibid.* at 7.
[81] Beane, *supra* note 56.
[82] Gillenwater, *supra* note 48.
[83] *Ibid.*

there is no "consensus on the technical components or a general definition of a carbon offset."[84] While this unregulated flexibility may be a benefit in some respects, it may "come at the cost of reduced credibility and inconsistent quality."[85] This means that VCM offsets could be generated using a variety of unethical and/or unsound methods. Carbon offsets can be generated by projects that fail to regard or to take seriously the characteristics of credible offsets.[86] Closely related is the second criticism that there is no oversight to ensure the quality of offsets generated by voluntary standards. This means that consumers are on their own when investigating the quality of projects that are used to produce the offsets they are purchasing.[87] Third, the voluntary carbon market lacks uniform rules, clear standards, transparency and registration requirements.[88] These three criticisms reflect the need for offsets sold on the voluntary market to be both registered and subjected to standardized assessment criteria. There has been a variety of tools created for the purpose of assessing the technical legitimacy of carbon offsets generated by voluntary carbon standards.[89]

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[84] Bumpus, *supra* note 39 at 131.

[85] Nadiya Taiyab. *Exploring the Market for Voluntary Offsets* (London: Institute for Environment and Development, 2006) at 9.

[86] *Ibid*.

[87] See, for example Exergia. "Voluntary Carbon Market Diagnosis: Report" (Athens: Exergia, 2007), online: (2007) Exergia <http://www.exergia.gr/index.aspx>.

[88] Kollmuss 2008, *supra* note 54 at 4.

[89] See, for example WWF, *supra* note 56.

There are also a number of "difficulties and emerging ideas around ownership of, and benefits from, forest carbon."[90] This observation constitutes the foundation for the second group of criticisms discussed in this paper. For example, critics of carbon trading often refer to the overrepresentation of offset projects in the "developing" world. This constitutes the fourth criticism, that offsets are often generated in developing countries and offer no benefits to local communities. This relates back to commodification to a certain extent, as many projects are developed by proponents who, despite failing to include local community, become holders of some of the (potentially) conflicting rights described above. The thrust of this criticism is that carbon projects can cause local populations to suffer negative consequences even though they benefit the global climate commons. IUFRO argues that "[i]f traditional, legal activities are curtailed by measures to maintain or enhance carbon stocks" then "there is a moral obligation to provide options for other livelihoods of at least equivalent value."[91] Linked is the idea that the entitlement of a community "to make use of resources determines the ability of that particular population to cope with and adapt to stress."[92]

This criticism is tied to the concept of "carbon colonialism",[93] which may take place via projects, including large-scale monoculture forest plantations, which threaten

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[90] FAO 2011, *supra* note 11 at 63.

[91] IUFRO, *supra* note 5 at 78.

[92] W.N. Adger & P.M. Kelly. "Social Vulnerability to Climate Change and the Architecture of Entitlements" (1999) 4 Mitigation and Adaptation Strategies for Global Change 253.

[93] Bachram, *supra* note 51 at 6.

the livelihoods of impoverished local populations whose survival depends on the use of that same land.[94] Projects may receive approval at bureaucratic but not community levels; and funds generated by acceptance of offset projects may be deposited into government coffers rather than community hands. However, as the President of Guyana has stated: "the citizens of forest countries – especially those who depend on the forest for livelihoods – must be active participants in framing a solution. In the same way as there is no solution to climate change without forestry, there is no solution to deforestation without the support of forest populations."[95]

In addition to commodifiable aspects of ecosystem services, there are additional services that may not be marketable, at least at present. A potential for unsustainable forest management arises, as the many other ecosystem services that are not yet commodified may be undervalued, at least in market contexts and monetary terms. This leads to the fifth criticism that environmental impacts associated with offset projects are often not adequately considered. As Hampicke notes "[i]t is inherent to economic value that it must be traded against other values."[96]

Some types of forest carbon projects, particularly monoculture forest plantations, may be harmful to the local environment despite their carbon removal actions. For

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[94] *Ibid.* at 7.

[95] His Excellency Bharrat Jagdeo, President of Guyana (November 2008) quoted in: Parker, *supra* note 46 at 4-5.

[96] Hampicke, *supra* note 70 at 159.

instance, the tension between efficient carbon sequestration and biodiversity has been documented.[97] Some of the environmental harms commonly associated with monoculture forest plantations include: biodiversity losses, water shortages, soil erosion, and increased incidence of plagues and infestations.[98] This type of project is said to trade "ecological debt" for carbon credits.[99] Environmental threats are particularly severe where forest plantations are populated by non-native or genetically modified species, which are often invasive. Thus, the prioritization of carbon removal through certain project types in order to maximize marketable commodities may be detrimental to overall social and environmental sustainability.

The sixth criticism is that higher "quality" standards generate more expensive carbon offsets. The price of carbon credits on the voluntary market varies dramatically. One factor that is thought to influence price is the commitment to environmental and social sustainability. However, critics argue that "[e]nvironmental commodity markets are inherently more susceptible to market failures than traditional markets because the commodity is both intangible and represents a public good."[100] In a market where there is no cap and no regulation, offset purchasers may be willing to pay less for lower quality offsets, as long as

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[97] Kristin Rosendal. "Impacts of Overlapping International Regimes: The Case of Biodiversity" (2001) 7 Global Governance 95.

[98] IUFRO, *supra* note 5 at 51.

[99] Jason Negron-Gonzales. "Earth Day Takes on a new meaning in Cochamba" online: (22 April 2010), online: (2010) WordPress <http://climatevoices.wordpress.com/2010/04/22/earth-day-takes-on-new-meaning-in-cochabamba/>.

[100] Gillenwater, *supra* note 48.

marketing gains are equivalent. As well, corporate shareholders may be content with being "carbon neutral" or "socially responsible" at a lower price. This could result in bad projects forcing good projects out of the market[101] because the economic valuation of any commodity is linked to consumers' willingness to pay.[102] This criticism is closely related to criticisms two and three.

The seventh criticism is that the voluntary carbon market provides "moral cover" for the "destructive consumption ethic, which literally drives the fossil fuel economy."[103] The trading of carbon offsets allows fossil fuel consumers to buy in to "quick fix" solutions, without regard for the necessity of committing to systemic changes and drastic consumption reductions that may be essential in effectively reducing emissions. Another aspect of this criticism, relating back to commodification, is that this type of market implies that one can simply purchase a right to pollute akin to a property right.

These criticisms reveal some of the commonly espoused shortcomings extant in the VCM at both practical and theoretical levels. These criticisms demonstrate that, despite tremendous carbon reduction possibilities, utilization of forest carbon projects to combat climate change "also poses a number of unique problems."[104] Such problems include determining the ownership of forest carbon, assessing long-

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[101] *Ibid*.
[102] Hampicke, *supra* note 70 at 159.
[103] Bachram, *supra* note 51 at 7.
[104] FAO 2011, *supra* note 11 at 58.

term financial benefits, and allocating ownership of these benefits by communities involved in forest activities.[105] According to the FAO, "[u]nclear or inequitable forest carbon ownership or land tenure can constrain the implementation of climate change policies and actions."[106]

PART VI: CONCLUSION

The importance of forests, and particularly forest management decisions, in combating and contributing to climate change, is undeniable. However, less clear is the role that the VCM and forest carbon projects should play. The VCM is often touted for its capacity to contribute to climate change mitigation. The adaptable and flexible nature of the VCM allows for innovation and experimentation beyond that permitted by regulatory markets. However, as an unregulated market solution, its benefits are more difficult to confirm. As such, forest carbon offsets can be difficult to assess and many criticisms and concerns have arisen, particularly with respect to sustainability and ownership matters.

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[105] *Ibid*.

[106] *Ibid*.

CHAPTER 2: METHODOLOGY: THE GOVERNANCE/SUSTAINABILITY RELATIONSHIP

PART I: INTRODUCTION

As climate governance and governance theory continue to evolve, it is becoming ever more apparent that climate governance is comprised of much more than the interactions and machinations of nation states in the context of international negotiations, institutions and regimes. Climate change poses a complex multi-faceted challenge to "the nonhuman world, to sustainability, and to governance and decision-making."[107] Perhaps for this reason, climate governance is occurring simultaneously at global, international, transnational, and various sub-national, including regional and local, levels.[108] The emergence of diverse climate governance initiatives reflects the need for governance innovation in light of the recognition that nation states are "limited in the degree to which they can directly affect emissions of GHG".[109] As a result, nascent climate governance initiatives often embody many of the attributes of "new governance". The term "new governance" comes from a growing body of governance literature that discusses governance arrangements displaying a commitment to values and design attributes that differ from those seen

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[107] W.N. Adger, J. Paavola & S. Huq. *Fairness in Adaptation to Climate Change* (Cambridge, MA: MIT Press, 2006) at 1.

[108] Harriet Bulkeley & Peter Newell. *Governing Climate Change* (Abingdon, UK: Routledge, 2010) at 13.

[109] *Ibid.* at 3.

in traditional "governmental" governance.[110] According to this literature, new governance arrangements commonly share a number of attributes, including: participation and power-sharing; multi-level interaction; diversity and decentralization; deliberation; flexibility and revisability; and experimentation.[111] Of particular note in new governance arrangements is the emerging role and increasing diversity of non-state actors.[112] The VCM is particularly illustrative of the diverse range of non-state actors participating in new governance arrangements within the context of forest-climate governance. In particular, "carbon offsets represent capital-accumulation strategies that devolve governance over the atmosphere to supranational and non-state actors and to the market."[113]

In this chapter, I introduce a two-stage analysis to explore the influence of governance arrangements on the quality of sustainability commitments in voluntary forest carbon standards. First, I use the "governance framework" to explore each particular carbon standard's governance arrangement in terms of its institutional, political and regulatory dimensions. Throughout the governance framework, I focus primarily on the creation and operation of the voluntary forest carbon standards.

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[110] Chris Tollefson, Tony Zito & Fred Gale. "Overview: Conceptualizing New Governance Arrangements" Public Administration (Forthcoming).

[111] Joanne Scott & David Trubek. "Mind the Gap: Law and New Approaches to Governance in the European Union" (2002) 8 European Law Journal 1; Meinhard Doelle, *et al*. "New Governance Arrangements at the Intersection of Climate Change and Forest Policy: Institutional, Political and Regulatory Dimensions" Public Administration (Forthcoming).

[112] *Ibid.* at 3; Peter Kanowski, Constance McDermott & Ben Cashore. "Implementing REDD+: Lessons from Analysis of Forest Governance" (2011) 14 Environmental Science and Policy 111 at 113.

[113] Bumpus, *supra* note 39 at 127.

Then, in the second stage of the analysis, I examine the content of the standards themselves in terms of articulated commitments to the promotion of sustainability, as well as the presence of mechanisms for assuring that these articulated commitments are fulfilled.[114] The purpose of the two-stage analysis is to explore a possible relationship between the structures and processes of a voluntary forest carbon standard's governance regime and the quality of its related sustainability commitments and outcomes.

By exploring a governance regime alongside its embedded sustainability commitments, we can learn about the governance structures and processes that (should) lead to more sustainable outcomes. The potency of this two-stage analysis lies in is its utility as a tool to compare voluntary forest carbon standards. Most importantly, this analysis can help to uncover whether the reasons behind the sustainability strengths and weaknesses of a particular voluntary forest carbon standard are related to the governance regime responsible for the standard's creation, implementation and operation.

This chapter explains the analysis used in this thesis to explore the influence of governance on sustainability within voluntary forest carbon standards. Part II sets out the necessary background to the analytical tools by introducing the concepts of governance and sustainability and how they relate to one another. Part III sets out

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[114] This analysis focuses on the content of the voluntary forest carbon standards being assessed. Full assessment of projects certified by these standards is beyond the scope of this project and is, perhaps, an area for future research.

the analysis in two parts. First, the diagrammatic governance framework adopted to analyze governance arrangements of the voluntary forest carbon standards is explained. The second part, which is concerned with the sustainability of forest carbon projects certified by each of the voluntary forest carbon standards, describes the sustainability criteria used to assess the standards.

PART II: GOVERNANCE AND SUSTAINABILITY

GOVERNANCE

"Governance" is a flexible term that is widely used in various contexts. For example, the term is sometimes used to refer to modes and processes of governing that are distinct from traditional government-controlled governing in which "binding decisions are taken by elected representatives within parliaments and implemented by bureaucrats within public administrations."[115] In contrast to this traditional model of government in which only state actors are involved, the concept of governance can encompass a broader variety of governing modes and processes that may include state actors alongside other actor types, or may not involve state actors at all. There are also some definitions of "governance" that can be seen to reflect particular foci or contexts. For instance, governance can be conceptualized as a situation in which state actors and private actors share decision-making power.

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[115] Oliver Treib, Holger Bahr & Gerda Falkner. "Modes of Governance: Towards a Conceptual Clarification" (2007) 14:1 Journal of European Public Policy 1 at 3.

This definition reflects a focus on the power balance between political actors.[116] Governance can also be conceptualized as a system of rules that shapes the actions of social actors; this definition reflects an institutional focus.[117] A common thread that runs through many iterations of governance is the centrality of "decision-making", whether this means a focus on the actors who make the decisions, the rules by which decisions can be made, the ways in which decisions are implemented, or some combination of these.

A simple and useful definition of "governance" for discussions about voluntary forest carbon markets and standards is that proposed by the United Nations Economic and Social Commission for Asia and the Pacific.[118] According to this definition, the term "governance" can be used to reflect any number of governing contexts and refers to "the process of decision-making and the process by which decisions are implemented (or not implemented)."[119] As such, the governance framework in this thesis investigates the "formal and informal actors involved in

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[116] R. Rhodes. *Understanding Governance: Policy Networks, Governance, Reflexivity and Accountability* (Buckingham: Open University Press, 1997), cited by Treib, *ibid.* at 3.

[117] Renate Mayntz. "Governance Theory als fortenwickelte Stuerunstheorie?" (2004) MPIfG Working Paper 04/1 (Koln: Max Planck Institute) cited by Treib, *supra* note 115 at 3.

[118] See United Nations Economic and Social Commission for Asia and the Pacific. *What is Good Governance?* (24 December 2006), online: (2006) UNESCAP <http://www.unescaorg/pdd/prs/ProjectActivities/Ongoing/gg/governance.pdf>

[119] *Ibid.* at 1.

decision-making and implementing the decisions made and the formal and informal structures that have been set in place to arrive at and implement the decision."[120]

SUSTAINABILITY

Since at least 1987, with the publication of the Bruntland Report,[121] the term "sustainability" has been widely used, overused and misused for a variety of purposes and in a variety of contexts. Generally, however, most definitions include the core idea that sustainability involves meeting the needs of the present generation without compromising the ability of future generations to meet their own needs.[122] The conception of sustainability adopted for this paper is based on that proposed by Robert Gibson in *Sustainability Assessment.*[123] Gibson's concept of sustainability was adopted for its flexibility and broad applicability across a range of case studies. According to Gibson, there are nine essential qualities that form the core of the concept of "sustainability" and are common to most conceptions of sustainability. They are the "shared basics" of sustainability (**Table 3**)[124] and form the foundation upon which this sustainability assessment occurs.

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[120] *Ibid.*

[121] Gro Harlem Bruntland, ed. *Our Common Future: The World Commission on Environment and Development* (Oxford: Oxford University Press, 1987).

[122] *Ibid.*

[123] Robert Gibson, *et al*. *Sustainability Assessment: Criteria, Process and Applications* (London: Earthscan, 2005).

[124] *Ibid.* at 59-62.

Table 3: CORE QUALITIES OF SUSTAINABILITY

CORE QUALITIES
1. The concept of sustainability is a challenge to conventional thinking and practice;
2. The concept of sustainability is in all its formulations concerned about long- as well as short-term well-being;
3. Sustainability covers the core issues of decision-making (the pursuit and maintenance of necessities and satisfactions, health and security, diversity and equity, ecology and community, preservation and development, etc.);
4. Sustainability demands recognition of links and interdependencies;
5. Sustainability must be pursued in a world of complexity and surprise, in which precautionary approaches are necessary;
6. The concept of sustainability recognizes both inviolable limits and endless opportunities for creative innovation;
7. Sustainability is an open-ended process, not a state;
8. The means and the ends are necessarily intertwined; and
9. The concept of sustainability is both universal and context-dependent.

GOVERNANCE AND SUSTAINABILITY RELATED

Depending on the context, there are a number of locations where governance and sustainability studies intersect and interact. In the context of analyzing voluntary forest carbon standards, there are a variety of analytical parallels. For example, the examination of either governance or sustainability requires a focus on process as well as substance, because there is an intrinsic linkage between means and ends.[125]

[125] John Graham, Bruce Amos & Tim Plumtre. "Principles for Good Governance in the 21st Century" (2003) Policy Brief No. 15. (Ottawa: Institute on Governance, 2003).

For both governance and sustainability, decision-making processes and actor roles are a primary concern.[126]

Another factor linking the concepts of governance and "new governance", as described in the introduction to this chapter, to the ideals of sustainability is the concept of "good governance". The Secretary-General of the United Nations has referred to good governance as "perhaps the single most important factor in eradicating poverty and promoting development."[127] According to the United Nations Development Programme, good governance has eight principal characteristics (**Table 4**).

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[126] Simon Bell & Stephen Morse. *Sustainability Indicators: Measuring the Immeasurable?* (London: Earthscan, 2008) at 96-97.

[127] Kofi Annan. *Partnerships for Global Community: Annual Report on the Work of the Organization* (New York: United Nations Department of Public Information, 1998) at para. 114, online: (1998) United Nations <http://www.un.org/Docs/SG/Report98/con98.htm>.

Table 4: UNDP PRINCIPLES OF GOOD GOVERNANCE

PRINCIPLES OF GOOD GOVERNANCE

1. **PARTICIPATION:** Informed and organized participation by both men and women, either directly or through intermediaries or representatives, is essential.
2. **RULE OF LAW:** Good governance requires fair legal frameworks that protect human rights and are enforced impartially by an independent and incorruptible enforcement body.
3. **TRANSPARENCY:** Requires that decision-making and implementation occur in accordance with the requisite rules and regulations. As well, information must be freely available and understandable to those who are affected by decisions and enforcement.
4. **RESPONSIVENESS:** Institutions and processes must serve stakeholders within a reasonable time.
5. **CONSENSUS-ORIENTED:** Requires a mediation of society's interests such that a broad consensus can be reached on what is, and how to achieve, the best interest of the whole.
6. **EQUITY AND INCLUSIVENESS:** Requires inclusion of all members of society, particularly those most vulnerable, such that they have an opportunity to improve or maintain their well-being.
7. **EFFECTIVENESS AND EFFICIENCY:** Processes and institutions must meet the needs of society while best using the available resources, including sustainable use of natural resources and environmental protection.
8. **ACCOUNTABILITY:** Requires that institutions be accountable to the public and their stakeholders.

Another iteration, proposed by the Institute on Governance, has condensed these eight characteristics into five themes, which are: Legitimacy and Vote; Direction; Performance; Accountability; and Fairness.[128] However, regardless of which iteration is selected, there is substantial overlap between many of the decision-making principles of good governance and those of sustainability. For example, Gibson's model of sustainability sets out eight Basic Sustainability Assessment

[128] Graham, *supra* note 125 at 3.

Decision Criteria (**Table 5**)[129] and acknowledges the reality of trade-offs in real-world decision-making processes.[130]

Table 5: SUSTAINABILITY ASSESSMENT DECISION CRITERIA[131]

DECISION CRITERIA
1. **SOCIO-ECOLOGICAL SYSTEM INTEGRITY:** Build human-ecological relations that establish and maintain the long-term integrity of socio-biophysical systems and protect irreplaceable life support functions upon which human as well as ecological well-being depends.
2. **LIVELIHOOD SUFFICIENCY AND OPPORTUNITY:** Ensure that everyone and every community has enough for a decent life and opportunities to seek improvements in ways that do not compromise future generations' possibilities for sufficiency and opportunity.
3. **INTRAGENERATIONAL EQUITY:** Ensure that sufficiency and effective choices for all are pursued in ways that reduce dangerous gaps in sufficiency and opportunity (and health, security, social recognition, political influence, etc.) between the rich and the poor.
4. **INTERGENERATIONAL EQUITY:** Favour present options and actions that are most likely to preserve or enhance the opportunities and capabilities of future generations to live sustainably.
5. **RESOURCE MAINTENANCE AND EFFICIENCY:** Provide a larger base for ensuring sustainable livelihoods for all, while reducing threats to the long-term integrity of socio-ecological systems.
6. **SOCIO-ECOLOGICAL CIVILITY AND DEMOCRATIC GOVERNANCE:** Build the capacity, motivation and habitual inclination of individuals, communities and other collective decision-making bodies to apply sustainability principles through more open and better-informed deliberations, greater attention to fostering reciprocal awareness and collective responsibility, and more integrated use of administrative, market, customary, collective and personal decision-making practices.
7. **PRECAUTION AND ADAPTATION:** Respect uncertainty, avoid even poorly understood risks of serious or irreversible damage to foundations for sustainability, plan to learn, design for surprise, and manage for adaptation.
8. **IMMEDIATE AND LONG-TERM INTEGRATION:** Attempt to meet all requirements for sustainability together as a set of interdependent parts, seeking mutually supportive benefits.

[129] Gibson, *supra* note 123 at 235-236.

[130] *Ibid.* at 237-238.

It is against this background understanding of sustainability that the sustainability assessment is adopted. The sustainability assessment set out in the second section of Part III describes the principles of sustainability as they relate to voluntary forest carbon standards. The criteria for analysis are based on Gibson's Sustainability Assessment Criteria and informed by the principles of good governance.

PART III: ANALYTICAL TOOLS

This part of the thesis describes the selected analytical tools in two sections. Section I describes the history and evolution of the governance framework. Application of this framework requires characterization of each voluntary carbon standard as a discrete governance arrangement. This framework will be used to reveal the institutional, political and regulatory features of each of the voluntary forest carbon standards. The analysis based on these features demonstrates how these governance arrangements were formed and operate, the actors involved, and the regulatory characteristics of the resulting standards. Section II describes the sustainability criteria, which will be employed to describe the sustainability commitments of the voluntary carbon standards being assessed and to determine credibility of carbon offsets certified under the assessed standards. Together, the governance framework and sustainability assessment form the analysis used in this

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[131] Gibson's 6th Decision Criteria (Socio-Ecological Civility and Democratic Governance) will not be considered in the sustainability assessment portion of the two-stage analysis undertaken for this project due to its close relationship with governance and the potential for circularity or a loop of causality.

thesis to explore the influence of governance arrangements on sustainability commitments within voluntary forest carbon standards.

SECTION I: GOVERNANCE FRAMEWORK

This section of the analysis is primarily concerned with the modes and processes of governance represented by the institutions, actors and regulatory policies that together comprise the governance regime associated with each of the voluntary forest carbon standards examined in this thesis. The governance analysis proposed in this paper is based on a three-dimensional governance framework (Treib Model) that originated in European political science literature and has since been operationalized and significantly elaborated and modified through various applications, many of which have been forest-related.[132] This model was chosen for its ability to permit analysis across multiple dimensions of governance, making it particularly suitable for use in a multi-faceted comparative analysis of governance arrangements. This analysis allows for disaggregation of governance arrangements in order to observe their constituent attributes. This is particularly useful as the purpose of this thesis is to explore whether governance influences sustainability commitments and, if so, which aspects of governance are responsible for this influence.

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[132] See for example, Tollefson, *supra* note 110; Michael Howlett, Jeremy Raynor & Chris Tollefson. "From government to governance in forest planning? Lessons from the case of the British Columbia Great Bear Rainforest Initiative" (2009) 11:5-6 Forest Policy and Economics 383; Doelle, *supra* note 111.

TREIB MODEL

In 2007, Treib, *et al*. created a model governance analysis in an attempt to add clarity to an ongoing debate concerning "governance" and "modes of governance".[133] Frustrated with the limited utility of categorizing of "old" and "new" governance modes, the Treib Model categorizes governing modes according to analytical concepts that are reflective of "typical properties of governing modes". [134] The Treib Model has two stages. The first is designed to "focus on the politics, polity and policy dimensions separately".[135] The second stage in the Treib Model is intended to explore the "[p]ossible relations between the three major dimensions."[136]

According to the Treib Model, the "politics" dimension explores the involvement of different types of actors within the decision-making system.[137] Two extremes are distinguished. At one extreme, only public (state) actors are involved. At the other extreme, only private actors are involved. However, despite the description of these two extremes, the Treib Model recognizes the rarity of both and acknowledges the range of mixed actor possibilities that lie between.[138] Rather than categorizing

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[133] Treib, *supra* note 115.
[134] *Ibid.* at 2.
[135] *Ibid.*
[136] *Ibid.*
[137] *Ibid.* at 7.
[138] *Ibid.* at 9.

regimes in terms of comprising solely private or public actors, the Treib Model observes the degree to which "a certain type of actor is predominant".[139]

The Treib Model's "polity" dimension focuses on the institutional features of a particular governance arrangement. From this perspective, the regime is explored in terms of whether its interactions are hierarchical or market-oriented, which constitute opposing ideal governance types.[140] "Hierarchical", in this context, refers to a situation in which a small number of actors can make decisions that bind others without their consent. "Market-oriented" refers to actors retaining freedom to elect their own courses of action. However, as Treib notes "[e]mpirically, only hybrid forms may be found since one mode of governance always entails elements of other modes of governance."[141] In the "polity" dimension Treib also explores whether there is a central locus of authority or many dispersed loci. Finally, this dimension explores the degree of "formal institutionalization of decision-making and implementation processes."[142]

The Treib Model's "policy" dimension examines the policy outputs of governance regimes. It explores whether the policy outputs are in a "hard law" form that binds members legally, such as regulations, directives and decisions,[143] or whether they

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[139] *Ibid.*
[140] *Ibid.* at 3.
[141] *Ibid.*
[142] I*bid.*
[143] *Ibid.* at 5.

are in "soft law" form, such as suggestions for behaviour or non-binding guidelines.[144] Another question addressed by this dimension is whether policy outputs are implemented in a rigid manner defining detailed standards, or in a flexible manner allowing a range of options.[145] In addition, the Treib Model examines the enforceability of policies. In particular, the presence or absence of sanctions is important. Finally, the Treib Model considers whether policy includes material or procedural standards or regulations.[146]

Based on the distinctions described, the Treib Model proposes a typology of four modes of governance in the policy dimension,[147] distinguished along two dimensions: instrument type (hard or soft) and implementation approach (rigid or flexible).[148] Based on this analysis, the four proposed governance modes in the policy dimension include: coercion, voluntarism, targeting and framework regulation.[149] "Coercion" refers to binding legal instruments that are highly

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[144] *Ibid.*

[145] *Ibid.* at 6.

[146] *Ibid.* at 7.

[147] The Treib Model does not propose typologies for the other two dimensions. However, according to Treib, *supra* note 115 at 17, a typology for the "polity" dimension has been proposed which also includes four modes of governance, including: unilateral action; negotiated agreement; majority vote; and hierarchical direction. See Fritz Scharpf. *Games Real Actors Play: Actor Centered Institutionalism in Policy Research* (Boulder, CO: Westview Press, 1997) at 46-47. A typology for the "politics" dimension has also been proposed, including: statist, pluralist, and three corporatist state-society relations called corporatism types A, B and C. See Gerda Falkner & Simone Leiber. "'Europeanization of social partnership in smaller European Democracies?"(2004) 10:3 European Journal of Industrial Relations 239.

[148] Treib, *supra* note 115 at 16.

[149] *Ibid.* at 14-16.

prescriptive, with detailed standards and little flexibility in implementation.[150] "Voluntarism" refers to non-binding guidelines, defining only broad policy goals for consideration by implementing parties.[151] "Targeting" refers to detailed non-binding recommendations that leave less room for flexible implementation.[152] "Framework regulation" refers to binding law with broad goals and a range of policy options allowing flexible implementation.[153]

Following the categorization of governance according to the three dimensions described above, the Treib Model analysis proposes a second step. This step involves exploration of possible relations between the three dimensions.[154] According to Treib, *et al*., the "most interesting question to be addressed by such an overall analysis would be whether particular modes of decision-making are likely to produce particular policy instruments."[155] The Treib Model hypothesizes that hierarchical imposition of policies will result in more coercive policy instruments. Meanwhile, the presence of consensus requirements among actors with diverse preferences will result in softer and more flexible instruments.[156]

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[150] *Ibid.* at 14.
[151] *Ibid.*
[152] *Ibid.* at 15.
[153] *Ibid.*
[154] *Ibid.* at 2.
[155] *Ibid.* at 16.
[156] *Ibid.*

TOLLEFSON AND GALE MODEL

The Treib Model of governance analysis was adopted, significantly elaborated and operationalized by Tollefson, Gale and Haley (Tollefson and Gale Model) in their in-depth examination of the Forest Stewardship Council.[157] In this adaptation, the three dimensions are renamed and re-elaborated in the first application of the framework to a contemporary governance arrangement. In the Tollefson and Gale Model, the three governance dimensions explored are: institutional (polity), political (politics) and regulatory (policy) dimensions. "Drawing on the insights" from analysis exploring the three dimensions, the project tackles "the task of providing an affirmative description of the theoretical significance of the FSC in governance terms" and argues that the Forest Stewardship Council is "a unique governance form".[158] This model provides the intellectual foundation for further elaboration and application of the original theoretical model in subsequent iterations.

HOWLETT MODEL

Howlett *et al.* further modified the Treib Model (Howlett Model), for use in the context of a forestry case study in British Columbia's Great Bear Rainforest.[159] The

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[157] Chris Tollefson, Fred Gale & David Haley. *Setting the Standard: Certification, Governance and the Forest Stewardship Council* (Vancouver: UBC Press, 2008). Chapters 10-12 discuss each of the three dimensions of the Treib Model in relation to analysis of the Forest Stewardship Council.

[158] *Ibid* at 9.

[159] Howlett, *supra* note 132.

Howlett Model utilizes Tollefson and Gale's terminological choices and introduces dual axis diagrams, which depict each of the three governance dimensions individually. Howlett *et al*. take the position that institutions set the framework for the exercise of power.[160] Institutional arrangements can be explained in terms of their formal or informal nature, coupled with the presence of state and non-state actors. This model conceives of a "nested" relationship among the three dimensions. "[I]nstitutional structures affect configurations of political power which, in turn, constrain the choices of types of regulatory tools used in specific circumstances."[161]

TOLLEFSON MODEL

Most recently, an international collaboration of researchers further adapted the model for use in a multi-scale, multi-sector governance analysis (Tollefson Model).[162] The Tollefson Model adopts the terminology used in the Tollefson and Gale model and the Howlett model, with some fairly substantial changes. Like the Howlett Model, the Tollefson Model makes use of diagrams to pictorially display results of analysis. According to this model, the horizontal axis of each diagram is used to depict the monocentric-polycentric continuum. "Monocentricity" refers to governance arrangements in which "problem-solving is vested in hierarchically organized governmental bodies with legally prescribed and mutually exclusive

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[160] *Ibid.* at 385.
[161] *Ibid.* at 386.
[162] Tollefson, *supra* note 110.

jurisdictional mandates."[163] Meanwhile, "polycentricity" refers to governance arrangements that are "more decentralized, multi-level decisional and implementation arrangements that feature a more prominent roles for firms, business associations, and civil society organizations."[164] Placement of a governance regime along the horizontal axis proceeds in accordance with determination of the quantity of actors and diversity of actor types.[165] The first criterion, quality of actors, is a simple reflection of the number of participants in the creation and process of the governance regime.[166] The second criterion, diversity of actor types, reflects the number of different types of actors in the regime, which are arguably representing different interests and concerns.

The vertical axis for each dimension in the Tollefson Model remains consistent with the Howlett diagrams, reflecting the relevant features of each dimension of the governance regime. Like the Howlett Model, the Tollefson Model regards the institutional dimension, which reflects the regime's level of formality, as the first dimension to be explored.[167] The second dimension to be explored is the political dimension.[168] In this dimension, the vertical axis represents state versus non-state involvement. This dimension reflects the power balance between state actors and

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[163] *Ibid* at 10.
[164] *Ibid.*
[165] *Ibid.* at 15.
[166] *Ibid.* at 12.
[167] *Ibid.*
[168] *Ibid.*

others, but does not differentiate other actor types. The third dimension is the regulatory dimension.[169] This axis represents the level of "bindingness" represented by the policy outputs of the governance regime.

SELECTED MODEL

In this thesis, the most recent Tollefson Model of the three-dimensional framework for governance analysis is adopted as it is the most clear, comprehensive and operational iteration of this framework to date. Voluntary forest carbon standards are the governance arrangements that will be subjected to analysis according to institutional, political and regulatory dimensions of governance. Like the Howlett and Tollefson Models, this thesis proceeds on the premise that the three dimensions "while interrelated, are conceptually different; in other words, commensurability between these three dimensions is not assumed."[170] This paper explicitly adopts the sequencing of analysis proposed by the Howlett and Tollefson Models, and will observe whether the nested relationship hypothesis posited is realized in this analysis[171]

HORIZONTAL AXIS

In each of the governance dimensions explored (institutional, political and regulatory) an additional dimension is also explored. This horizontal or "fourth" dimension remains the same in each diagram and represents a monocentric-

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[169] *Ibid.*

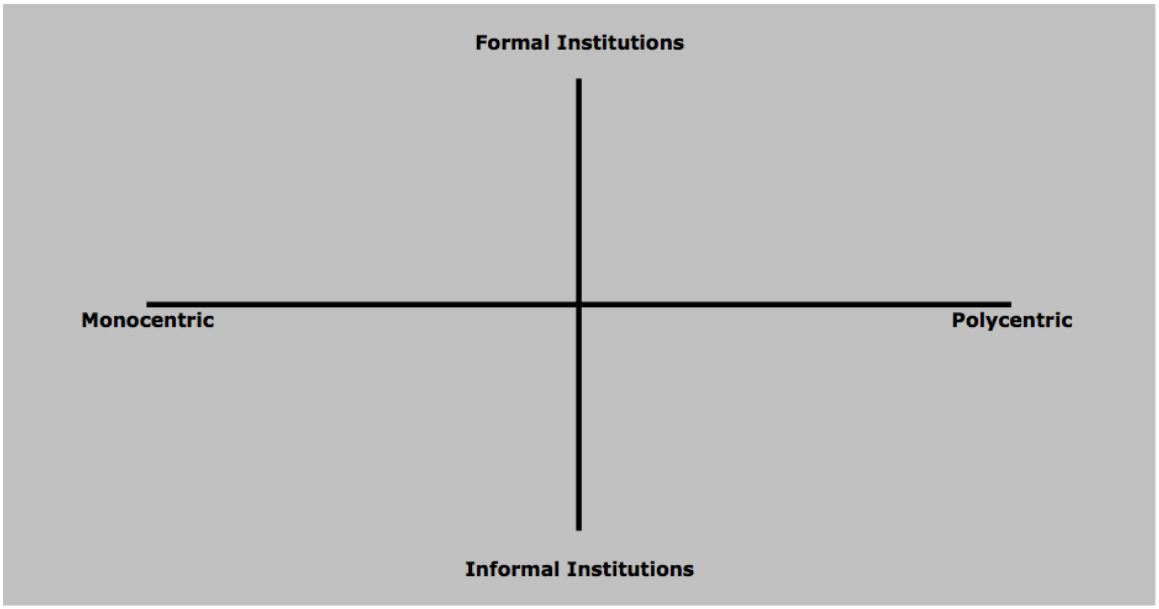
[170] *Ibid* at 11.

[171] *Ibid.*; Howlett, *supra* note 132 at 386.

polycentric continuum. "Monocentric governance" refers to regimes and arrangements whereby authority is centralized and hierarchical,[172] such as that typically seen in traditional government-style organizations.[173] In contrast, polycentric governance arrangements are more decentralized and adaptive, with dispersed authority and frequently greater participant numbers and/or diversity.[174] As such, placement along the horizontal axis will be determined by the quantity and diversity of actors.

INSTITUTIONAL DIMENSION

Figure 1: THE INSITUTIONAL DIMENSION



[172] Treib's definition of "hierarchical" as a situation in which a small number of actors can make decisions that bind others without their consent is explicitly adopted.

[173] Tollefson, *supra* note 110 at 10.

[174] *Ibid.*

The first dimension to be explored is the institutional dimension. The dual metrics for analysis in this dimension are monocentric-polycentric on the horizontal axis and formal-informal on the vertical axis. Analysis of these metrics reveals the institutional structures that exist within a carbon standard's architecture. The formality of institutions in these governance regimes will be investigated according to the following criteria: structured-flexible; permanent-impermanent; and bounded-blurred boundaries.[175] The subject carbon standards will be located on the institutional diagram (Figure 2.1) in accordance with these criteria, but also relationally.[176] This means that, while one or more standards' institutions may possess formal or informal characteristics, their locations on the diagram will also show their levels of formality in relation to one another.

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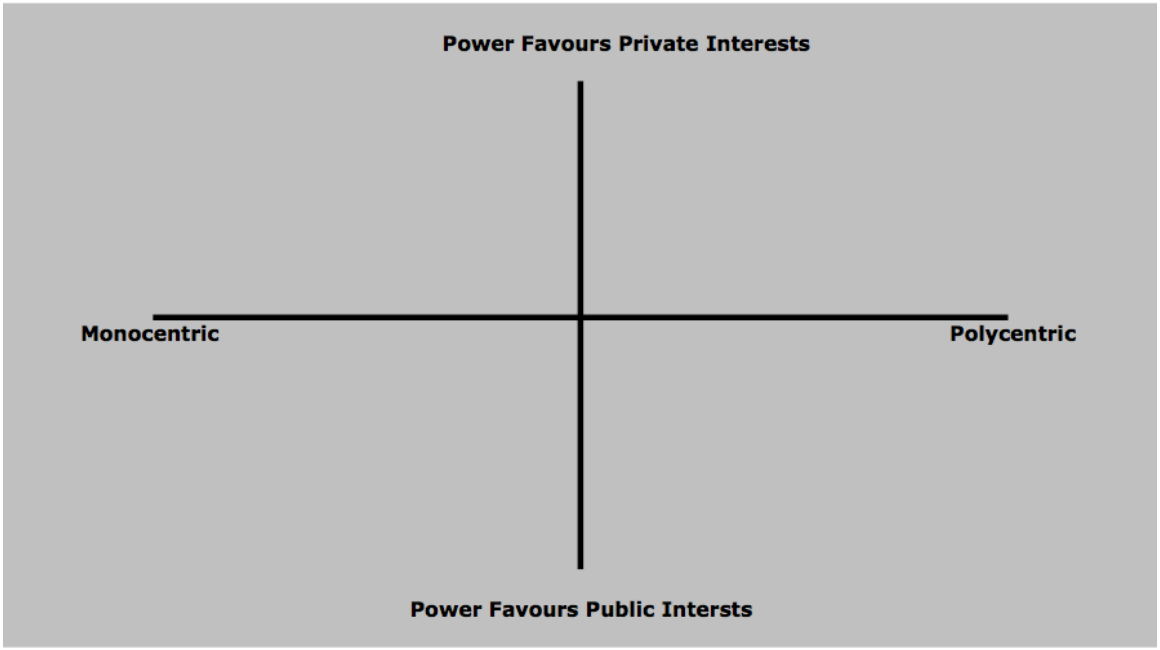
[175] *Ibid.* at 13.

[176] Figures 1-3 have been adapted from Howlett, *supra* note 132 at 385-386 and Tollefson, *supra* note 110 at 13-15.

POLITICAL DIMENSION

Figure 2: THE POLITICAL DIMENSION

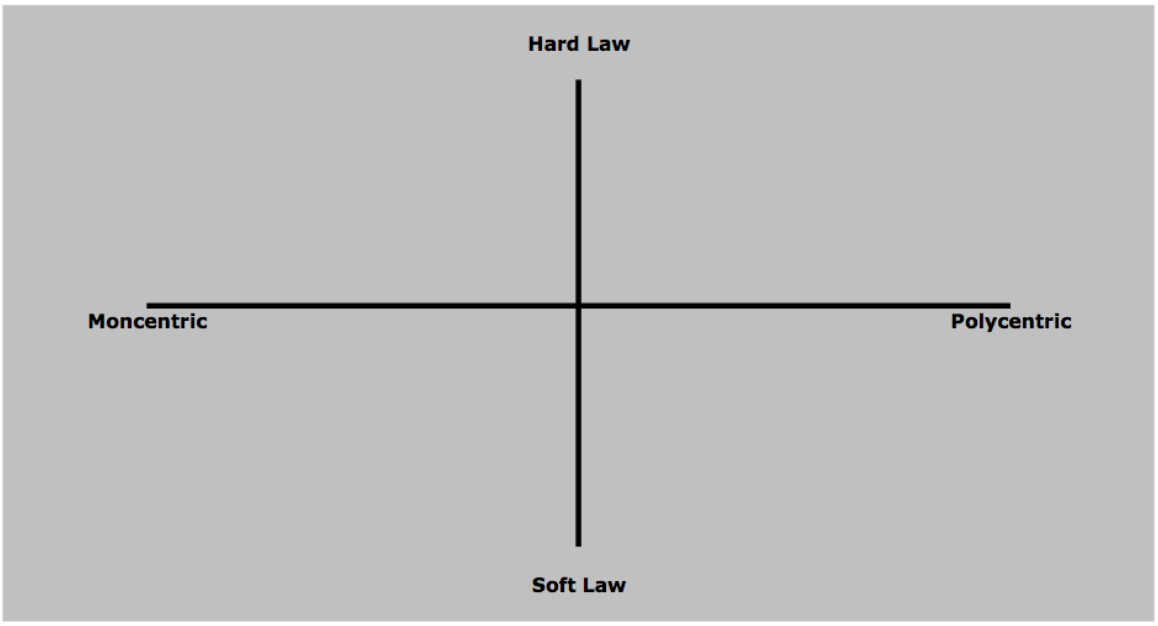


Secondly, the subject voluntary forest carbon standards will be examined in terms of the political dimension. The political dimension focuses on the identity and influence of key actors and policy networks, as well as on the political forces at play and how they set the stage for the regime that emerges. The carbon standards will be located on the political diagram (Figure 2.2) in accordance with the predominance of certain actor-types possessing political power. Previously, analysis in this dimension has investigated the political power that exists within a new governance arrangement's architecture in terms of the location and allocation of that power between state and non-state actors. This iteration varies slightly because, in general, voluntary forest carbon standard governance regimes are

entirely populated by non-state actors. Rather than simply plotting all of the governance arrangements at the "non-state" end of the continuum, the diagram will be used to depict the balance of power between private-interest actors and public-interest actors.

REGULATORY DIMENSION

Figure 3: THE REGULATORY DIMENSION



Thirdly, the voluntary forest carbon standards will subjected to analysis in the regulatory dimension. The vertical axis in this dimension is adopted from international law's characterization of international regimes, with hard law at the top and soft law at the bottom. It is useful to conceptualize a continuum from hard law to soft law, rather than a dichotomy.[177]

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[177] Kenneth Abbott, *et al*. "The Concept of Legalization" (2000) 54:3 International Organization 401 at 401.

There are three main characteristics of hard law: obligation, precision and delegation. "Obligation" refers to the adoption by parties of credible commitments to be bound by a rule or set of rules.[178] "Precision" means that the rules unambiguously define the behaviour that is prescribed, regulated or prohibited.[179] "Delegation" refers to the granting of authority to third parties to implement, interpret and apply the rules; to resolve disputes; and to make new rules.[180] This analysis will also consider the Treib Model's proposed typology of governance modes in the "policy" dimension.[181]

Following the complete three dimensional analysis, inter-dimensional trends and relationships will be explored. As Treib *et al.* suggest, the most interesting part of this type of governance analysis is the exploration of whether "particular modes of decision-making are likely to produce particular policy instruments."[182] Do more formal processes lead to more stringent regulation, as Treib *et al.* hypothesize? Or do these dimensions influence one another in different ways? It is anticipated that governance arrangements that occupy similar locations on one of the dimensional diagrams will also occupy similar locations on the other diagrams.

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[178] *Ibid.*

[179] *Ibid.*

[180] *Ibid.*

[181] As noted previously, this typology includes four modes of governance: coercion, voluntarism, targeting and framework analysis.

[182] Treib, *supra* note 115 at 16.

SECTION II: SUSTAINABILITY ASSESSMENT

Sustainability, the primary focus of the second stage of analysis, is a somewhat adjustable concept; its definitions vary widely. The metrics used for this combined analysis were selected from a variety of sources and combined to create a robust analysis. The most influential sources in generating the criteria for this analysis are: Robert Gibson's *Sustainability Assessment*, which was selected for its integration of the essential qualities that are common to most conceptions of sustainability;[183] the Manomet Forest Carbon Scorecard, which was selected for its rigorous approach to the challenges associated with forest carbon offset projects;[184] and the World Wildlife Fund's Forest Carbon Standards Assessment Guide, which was selected for its commitment to ensuring that "forest carbon activities are carried out in ways that ensure integrity of existing forests, protect biodiversity and promote a range of other environmental and social values".[185] Taken in combination with the principles of good governance, and viewed against the backdrop of VCM criticisms outlined in Chapter 1, these sources allow for assessment of each voluntary forest carbon standard's articulated commitments to the promotion of sustainability commitments and accompanying assurance mechanisms.

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[183] Gibson, *supra* note 123.
[184] Beane, *supra* note 56.
[185] WWF, *supra* note 56.

In order to generate a comparative analytical tool, the analysis will explore whether, and in what manner, each voluntary forest carbon standard incorporates particular sustainability criteria, as well as how each standard ensures that each criterion is met. This method allows for simple and effective individual and comparative analysis of the sustainability commitments of the subject voluntary forest carbon standards. The criteria selected for the sustainability assessment are broken down into several categories, which reflect the principles of credible carbon accounting, sustainability and good governance. The first two categories, legal commitments and technical requirements, relate to the credibility of offsets generated by certified projects under each standard. The third category includes sustainability criteria adapted from Gibson's Sustainability Assessment Decision Criteria (**Table 5**).

In order to assess the relative "performance" of the voluntary forest carbon standards, several aspects of each standard's articulated sustainability commitments will be considered. First, standards that incorporate all of the criteria in a particular category will be considered to have "better" performance than those that incorporate only some of the criteria in that category. Likewise, standards that incorporate all criteria in each of the three categories will be considered to have "better" performance than standards that do not. As well as determining the inclusion or absence of an articulated commitment to each of the sustainability criteria, the comprehensiveness and quality of the standards' commitments will also be considered. A factor in ranking the relative quality of sustainability commitments in the standards will be the manner in which the standards ensure

that each articulated criterion is met. For instance, assurance through independent third-party verification will be considered to demonstrate "better" performance than other forms of assurance.

LEGAL COMMITMENTS

This category addresses the basic legal and/or regulatory commitments required of projects certified under each standard. Criteria for consideration in addressing this category are: ownership and tenure requirements for forest project lands; compliance requirements for federal, state and local laws; dispute resolution mechanisms; and sanctions. This category reflects the good governance principle of "rule of law", as well as linking to the regulatory dimension in the governance framework set out in the preceding section. This category also speaks to concerns about ownership of offsets generated, relating back to the fourth criticism in Chapter 1.

TECHINICAL REQUIREMENTS

This category considers each standard's technical requirements for carbon accounting. Criteria for consideration are those generally accepted elements that lead to credible carbon offsets, including baselines;[186] additionality;[187] monitoring and verification;[188] permanence;[189] leakage;[190] and transparency.[191] Full definitions

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[186] Beane, *supra* note 56 at 12-13.
[187] *Ibid.* at 13-14.
[188] *Ibid.* at 14-15.

for these carbon accounting criteria are set out in Chapter 1 (**Table 2**). This category relates as well to the first three VCM criticisms set out in Chapter 1, namely that: there is no benchmark against which standards can be measured; there is no oversight to ensure the quality of offsets generated; and that the voluntary carbon market lacks uniform rules, clear standards, transparency and registration requirements.[192]

SUSTAINAIBLITY CRITERIA

SOCIO-ECOLOGICAL SYSTEM INTEGRITY**[193]**

This criterion assesses the maintenance of long-term integration of socio-biophysical systems, as well as the protection of the irreplaceable life support functions upon which human, as well as ecological, well-being depends. With respect to the voluntary forest carbon standards being assessed, the criterion considers how each standard deals with the project-level assessment of positive and negative environmental, social, and economic impacts, as well as any actions required for prevention and/or mitigation of negative impacts.[194] This category also relates to the "effectiveness and efficiency" principle of good governance.[195] Also

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[189] *Ibid.* at 15-16.
[190] *Ibid.* at 16.
[191] *Ibid.* at 17.
[192] *Ibid.*
[193] Gibson, *supra* note 123 at 235.
[194] Beane, *supra* note 56 at 17.
[195] UNESCAP, *supra* note 118 at 3.

related is the fifth VCM criticism, that environmental impacts, particularly biodiversity losses, are not adequately considered.

LIVELIHOOD SUFFICIENCY AND OPPORTUNITY[196]

This criterion assesses whether each standard requires inclusion of local communities in certified carbon projects, as well as the way(s) that projects provide economic and livelihood opportunities and/or provide or enhance access to basic resources and essential services. This criterion is related to the good governance principle of equity and inclusiveness[197] and the fourth VCM criticism that forest carbon projects offer no benefits to local communities.

INTRAGENERATIONAL EQUITY[198]

This criterion assesses whether each standard's certified projects contribute to poverty reduction and reduce gaps between the rich and the poor. This criterion relates to the good governance principle of equity and inclusiveness[199] and also the fourth VCM criticism.

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[196] Gibson, *supra* note 123 at 235.
[197] UNESCAP, *supra* note 118 at 3.
[198] Gibson, *supra* note 123 at 235.
[199] UNESCAP, *supra* note 118 at 3.

INTERGENERATIONAL EQUITY[200]

This criterion assesses whether certified projects present options and actions that are likely to preserve or enhance the opportunities and capabilities of future generations to live sustainably. This criterion relates to the fifth VCM criticism, that environmental impacts are not adequately considered.

RESOURCE MAINTENANCE AND EFFICIENCY[201]

This criterion assesses whether certified forest carbon projects contribute to the provision of a larger support base for sustainable livelihoods, while reducing threats to long-term integrity of socio-ecological systems.

PRECAUTION AND ADAPTATION[202]

This criterion assesses each standard's consideration of, and requirements for, preparation in relation to the risk of serious or irreversible damage to the foundations of sustainability. This criterion considers precaution and adaptation, as well as mechanisms for effective monitoring and response.

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[200] Gibson, *supra* note 123 at 235.
[201] *Ibid.*
[202] Gibson, *supra* note 123 at 236.

IMMEDIATE AND LONG TERM INTEGRATION[203]

This criterion assesses each standard's requirements for integrated sustainability benefits in both immediate-term and long-term timeframes.

Application of the sustainability criteria requires considering each criterion for each of the voluntary carbon standards assessed, including the content of the standards as well as additional policies or guidelines. The goal of subjecting voluntary carbon standards to the sustainability assessment is to explore their sustainability strengths and shortcomings both individually and comparatively.

PART IV: CONCLUSION

In this chapter, I have introduced an analytical framework to assess the governance features and sustainability commitments of voluntary forest carbon standards. The importance of the relationship between sustainability and governance has been recognized elsewhere. For instance, Bell and Morse acknowledge that "[r]ecognizing that sustainability means different things to different people is at the heart of the matter."[204] Further, they observe that the glue that bonds is "people and participation – who makes the decisions and how."[205] The governance framework and sustainability assessment discussed in this paper allow for investigation of a

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[203] *Ibid.* at 236.
[204] Bell, *supra* note 126 at 96-97.
[205] *Ibid.*

possible relationship between the governance arrangements of voluntary forest carbon standards and their concomitant sustainability commitments by revealing emerging trends through a comparison of standards across and within the two stages of analysis.

By engaging with the governance arrangements of the subject standards, each one's sustainability-related strengths and shortcomings may be exposed. The kind and quality of processes used to generate and operate each standard will become clear through the governance analysis. Meanwhile, through the sustainability assessment, each standard's commitments can be analyzed in accordance with specified sustainability criteria. Finally, through examination of the particular governance processes and styles that emerge in stage one, coupled with the sustainability commitments revealed in stage two, trends and relationships can begin to be posited. For example, when both stages are considered together, will the analysis reveal that certain governance styles or arrangements lead to more sustainable outcomes? If so, is it institutions, actors, regulations or some combination of these governance dimensions that can be linked to more sustainable outcomes? For instance, the presence or absence of articulated commitments to particular sustainability criteria may be related the institutional mandate of a particular standard. Alternatively, the presence or absence of commitments could be the result of the prevailing agenda of dominant actor-types in the political dimension. As well, the way in which each standard ensures that its articulated commitments are fulfilled may relate to both the institutional and the regulatory

dimension. These questions and hypotheses will be considered as I complete the analysis that is documented in the latter chapters of this thesis.

CHAPTER 3: VOLUNTARY FOREST CARBON STANDARD CASE STUDIES

PART I: INTRODUCTION

This chapter introduces the carbon standard case studies that have been selected for analysis in this paper. The selected standards were chosen for their diversity in terms of origin and purpose, current operational status, specific applicability to forests and the public availability of documents. The selected case studies include the Verified Carbon Standard (VCS), the Climate Community and Biodiversity Standard (CCBS), Plan Vivo and the CarbonFix Standard (CFS). Other standards were excluded from analysis for similar reasons. For example, the World Wildlife Fund's Gold Standard was excluded because it does not cover the forest sector. Meanwhile, the Forest Carbon Standards Committee Draft Standard[206] was excluded because the standard has not yet achieved operational status, and may never do so, as the Committee has suspended all work on its development as of January 2011.[207]

The standards selected for this study are intentionally diverse in order to test the hypothesis of a governance-sustainability relationship across a variety of case studies within a particular sector. In particular, VCS was chosen because it is the

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[206] Forest Carbon Standards Committee. *North American Forest Carbon Draft Standard* (FCSC, 2010).

[207] Forest Carbon Standards Committee. *A Bi-National Forest Carbon Offset Standard: Report on a Development Process* (FCSC, 2011).

overwhelming leader in terms of transaction volumes[208] despite its lack of commitment to social and environmental benefits. Meanwhile, CCBS was selected for its focussed commitment to social and environmental outcomes. Plan Vivo was selected for its commitment to grassroots approaches to offset generation. Finally, CFS was selected for its uniqueness in having gained UNFCCC accreditation. This range of standards will be analyzed in the next chapter with an emphasis on uncovering the influence of governance arrangements on the presence or absence of articulated commitments to sustainability.

Each case is set out below with sections describing background, organization and sustainability commitments. Program delivery information for each of the standards is provided in the Appendices (see **Appendices II-V**). Information for these case studies has been gleaned primarily from publicly available documentation produced by the standards organizations and the websites they maintain, with supplemental information from other analytical and academic sources.

PART II: THE VERIFIED CARBON STANDARD[209]

The Verified Carbon Standard (VCS), formerly the Voluntary Carbon Standard,[210] is a broad standard that covers all six greenhouse gases and certifies all project types.[211]

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[208] See for example Peters-Stanley *et al., supra* note 60 at vi.

[209] Verified Carbon Standard: A Global Benchmark for Carbon. Online: <http://www.v-c-s.org/> [VCS].

[210] VCS. "Change to VCS Nomenclature Makes No Change to Rights and Obligations of

The VCS does not currently consider social or environmental sustainability benefits in its certification scheme.[212] However, the VCS "allows project proponents to pair the VCS Standard with other recognized standards to develop credits that meet VCS quantitative GHG accounting criteria and the criteria of standards designed to deliver social, biodiversity or other benefits."[213] The scope of the VCS is extensive, covering all project types that are supported by an approved methodology.[214] The VCS has developed a separate set of rules specific to the Agriculture, Forestry and Other Land Use (AFOLU) sector, covering projects in the areas of: afforestation, reforestation and revegetation; improved forest management; and reducing emissions from deforestation.[215]

BACKGROUND

The Verified Carbon Standard Association (VCSA),[216] initially a joint enterprise of the Climate Group,[217] the International Emissions Trading Association[218] and the

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VCUs" Policy Announcement from the VCS Association. 1 February 2011 (Washington: VCSA, 2011).

[211] VCS. *VCS Program Guide: VCS Version 3* (Washington: VCSA, 2011) at 6. [VCS Program Guide].

[212] Paulo Lopes. "Review of Forestry: Development if a Tool for Organizations to Indentify the Most Appropriate Forestry Carbon Credit", online: (2008) Forest Carbon Portal <http://www.forestcarbonportal.com/resources?page=54>.

[213] VCS Program Guide, *supra* note 211.

[214] *Ibid.* at 6.

[215] VCS. *AFOLU Requirements: VCS Version 3* (Washington: VCSA, 2011). [VCS AFOLU]

[216] VCSA is an independent non-profit organization registered in Maryland, United States. See VCS Program Guide, *supra* note 211 at 2.

[217] "The Climate Group is an independent not-for-profit organization working internationally with government and business leaders to advance smart policies and

World Economic Forum,[219] began in 2005; the first version of the standard was published in 2006 and launched in 2007. In 2007, the World Business Council for Sustainable Development[220] also became a "founding partner" of the VCS.[221] In the spring of 2006, Version 1 of the VCS was released to the public as a pilot standard and consultation document. Following this, Version 2 was released in the fall of 2006 as a consultation document, but did not replace Version 1 as a market standard.[222] A 19-member Steering Committee, comprised of NGOs, designated operating entities (DOEs), industry associations, project developers and large offsets buyers,[223] was formed to consider stakeholder comments collected in the consultations on Versions 1 and 2 and to draft the final standard.[224] In 2009, the VCS incorporated as a non-profit association with a professional staff to manage the

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technologies to cut global emissions and accelerate a clean industrial revolution." It was founded in 2004 and has operations in Australia, China, Europe and North America. See <http://www.theclimategroup.org>.

[218] The International Emissions Trading Association is "a nonprofit business organization created in June 1999 to establish a functional international framework for trading in greenhouse gas emission reductions" with offices in Geneva, Toronto Brussels, Washington and San Francisco. See <http://www.ieta.org>.

[219] The World Economic Forum is "an independent international organization committed to improving the state of the world by engaging business, political, academic and other leaders of society to shape global, regional and industry agendas." See <http://www.weforum.org>.

[220] The World Business Council for Sustainable Development is "a CEO-led, global association of some 200 companies dealing exclusively with business and sustainable development." See <http://www.wbcsd.org>.

[221] VCS, *supra* note 209.

[222] *Ibid*.

[223] Kollmuss 2008, *supra* note 54 at 58.

[224] VCS, *supra* note 209.

program. Version 3 of the VCS replaced Version 1 as the market standard in March 2011.[225]

ORGANIZATION

The VCSA is a non-profit association,[226] with start-up funding from the founding partners, representing the VCS Secretariat and the VCS Board.[227] The Secretariat's original functions were to: respond to stakeholder inquiries; manage the project's database and website; and manage registry operators and accreditation bodies.[228] Meanwhile, the VCS Board was charged with approval of substantial changes to the VCS, and evaluation and approval of other GHG standards' methodologies and performance standards. The Board was also empowered to: suspend any approved program, either temporarily or indefinitely, which had been altered in such a way as to impact its compatibility with VCS; sanction validators, verifiers, proponents or registry operators for improper procedure; and decide appeals by proponents against verifiers or validators.[229] However, the VCS is now run by a professional staff, which manages VCS operations, business and program development. The Board of Directors, comprised of executives from the founding partners,[230] acts in an

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[225] *Ibid.*

[226] VCSA incorporated as a non-profit association in Washington, DC in 2009. See VCS, *supra* note 209.

[227] *Ibid.*

[228] Kollmus 2008, *supra* note 54 at 59.

[229] *Ibid.*.

[230] VCS, *supra* note 209.

advisory capacity via provision of "input and guidance".[231] As well, multiple expert committees are employed to provide expertise for different aspects of the program and collaborate in drafting VCS rules and requirements (see **Appendix I**).[232]

SUSTAINABILITY

The VCS requires all AFOLU projects to identify and mitigate potential detrimental environmental and/or socio-economic impacts before generating VCUs (see **Appendix II)**. The VCS does not focus on social and environmental benefits, but allows for the possibility that proponents will choose to obtain dual certification with another standard, such as Social Carbon or the Climate, Community and Biodiversity Standard "to ensure their projects co-deliver social and environmental benefits."[233]

PART III: CLIMATE, COMMUNITY AND BIODIVERSITY STANDARDS[234]

The Climate Community and Biodiversity Standard (CCBS) is a biosequestration and mitigation project design standard that emphasizes social and environmental benefits. The scope of CCBS extends to all land-based project types.[235] The stated

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[231] The staff includes the CEO, Director of Program Development, Program Manager, AFOLU Manager, Outreach Manager, Senior Program Officer, Program Officer and Office Manager. VCS, *supra* note 209.

[232] *Ibid.*

[233] VCS Program Guide, *supra* note 211 at 4.

[234] Climate, Community and Biodiversity Alliance. Online: <www.climate-standards.org> [CCBA].

[235] CCBA. *Climate, Community & Biodiversity Project Design Standards Second Edition* (Arlington, VA: CCBA, 2008) at 7. [CCBA Standards]

goal of the standard is to stimulate the development and marketing of land-based projects that deliver credible and positive climate, community and biodiversity benefits through the provision of flexible rules and guidance for integrated project design.[236] However, it must be noted that CCBS does not certify forest carbon projects for carbon offset generation and does not have a registry. Instead, the standard certifies carbon projects based on social and environmental criteria.[237] Certification for offset generation can be achieved through CCBS accreditation, in tandem with CDM or another voluntary forest carbon standard's certification scheme.

BACKGROUND

The Climate Community and Biodiversity Alliance (CCBA), a partnership comprising several non-governmental organizations, corporations and research institutes, developed the standard. CCBA members include: Center for Environmental Leadership in Business at Conservation International,[238] The Nature Conservancy,[239]

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[236] *Ibid* at 7.

[237] *Ibid.* at 8.

[238] Center for Environmental Leadership in Business at Conservation International operates as a forum for corporate leaders to work with each other to identify key issues and promote ways to institute pro-environmental practices while improving business performance. See <http://www.conservation.org/sites/celb/Pages/main.aspx>.

[239] The Nature Conservancy is a not-for profit organization registered in the United States, with local chapters in 50 U.S. states and 33 countries. The stated mission of the Nature Conservancy is "to preserve the plants, animals and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive." See <http://www.nature.org/>.

CARE,[240] Rainforest Alliance[241] and the Wildlife Conservation Society.[242] Funding for standards development and management has been diverse and includes contributions from: The Blue Moon Fund,[243] The Kraft Fund,[244] BP,[245] Hyundai,[246] Intel,[247] SC Johnson,[248] Sustainable Forestry Management[249] and Weyerhaeuser.[250] The CCBS was originally drafted by the NGO members of the CCBA, followed by a three-month public comment period in 2004.[251] The draft standards were then field-

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[240] CARE is a humanitarian organization dedicated to combating global poverty. See <http://www.care.org/>.

[241] Rainforest Alliance is a New York-based non-governmental organization operating to conserve biodiversity and ensure sustainable livelihoods through the transformation of land-use practices, business practices and consumer behaviour. See <http://www.rainforest-alliance.org/>.

[242] The Wildlife Conservation Society, founded in 1895, operates to save wildlife and wild places across the globe with programs on four continents. <http://www.wcs.org/>

[243] The Blue Moon Fund is a philanthropic organization that works to build human and natural resilience to a changing and warming world. See <http://www.bluemoonfund.org/>.

[244] The Kraft Fund is the Henry Phillip Kraft Family Memorial Fund, the purpose of which is to support environmental projects of national and international significance. See <http://www.nycommunitytrust.org/GrantSeekers/GrantmakingGuidelines/CommunityDevelopmentandtheEnvironment/NationalandInternationalEnvironmentalGrants/tabid/432/Default.aspx>.

[245] BP is an international oil and gas company. See <http://www.bpcom>.

[246] Hyundai is a Korean automaker. See <http://www.hyundai.com/>.

[247] Intel is an American global technology company. See <http://www.intel.com/>.

[248] SC Johnson is an American manufacturer of household cleaning supplies and chemicals, with operations around the world. See <http://www.scjohnson.com>.

[249] Sustainable Forestry Management was established in 1999 to demonstrate that attractive returns can be generated by investment in the world's tropical and subtropical forests. See <http://www.ecosystemmarketplace.com/pages/dynamic/organization.page.php?page_id=982&section=home&eod=1>.

[250] Weyerhaeuser is one of the world's largest pulp and paper companies. See http://www.weyerhaeuser.com/.

[251] CCBA Standards, *supra* note 235.

tested in Indonesia, Tanzania, Peru, Bolivia, Ecuador, Scotland and Madagascar. A second draft was generated and released in 2005,[252] after collaboration between the original authors and three independent advising institutions: Centro Agronmico Tropical de Investigacion y Ensanansa (CATIE);[253] the World Argroforestry Center (ICRAF);[254] and the Center for Forestry Research (CIFOR)[255]. The CCB Standards Second Edition was released in late 2008.[256]

ORGANIZATION

The CCBA is made up of representatives from member organizations; it comprises the director, the CCBA membership and the CCBA Committee. The director is tasked with drafting all documents and bears responsibility for distribution of information and publication of documents on the website. The membership, comprising the NGO members of the CCBA, has final decision-making power in terms of revision of the standards and terms of reference. The CCBA membership creates the CCBA Committee, which is "responsible for assisting the Director" and "appropriately

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[252] In May 2005 CCBA released the First Edition: CCBA. *Climate, Community & Biodiversity Project Design Standards First Edition* (Arlington, VA: CCBA, 2005).

[253] Centro Agronmico Tropical de Investigacion y Ensanansa (CATIE) is an education institute located in Costa Rica. See <http://www.catie.ac.cr/>.

[254] World Argroforestry Center (ICRAF) is a not-for-profit research organization dedicated to generating and applying the "best available knowledge" to stimulate agricultural growth, raise farmers' incomes and protect the environment. See <http://www.worldagroforestrycentre.org/>.

[255] Center for Forestry Research (CIFOR) is a non-profit global facility dedicated to conducting research to advance human well-being, environmental conservation and equity. See <http://www.cifor.cgiar.org/>.

[256] CCBA Standards, *supra* note 235.

balanc[ing] the concerns of all interested parties."[257] Approved third-party auditors are responsible for validation and verification. The CCBA is responsible for approval, and removal, of auditors, which can be achieved via CDM certification for afforestation and reforestation or evaluator certification under the Forest Stewardship Council.[258]

SUSTAINABILITY

All CCBS-certified projects are required to meet social and environmental criteria. Projects must have net positive impacts on biodiversity, on the social and economic well-being of communities, and on climate change.[259] As well, all projects must meet CCBS guidelines for legal and property rights, project design and best management practices.[260] Basic approval requires satisfaction of all 14 criteria. Exceptional projects can acquire Gold Level approval by satisfying one or more optional criteria in addition to the 14 required criteria (see **Appendix III)**.

PART IV: PLAN VIVO[261]

Plan Vivo is a carbon standard that certifies small-scale land use, land-use change and forestry LULUCF projects, with emphasis on sustainable development, rural

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[257] CCBA, *supra* note 234.
[258] *Ibid.*
[259] CCBA Standards, *supra* note 235 at 10-11.
[260] *Ibid*.
[261] Plan Vivo. Online: <http://www.planvivo.org/> [Plan Vivo].

livelihoods and ecosystems.[262] The standard focuses on participatory design, ongoing stakeholder consultation and integration of native species, while keeping "levels of bureaucracy and rigidity at a minimum" in order to "enable project coordinators to start activities at a small scale and then increase them as they build capacity."[263] Plan Vivo is intentionally a "simple, practical" system because "in many developing countries, current forestry policy and institutions lack the capacity to promote land-use change through the highly bureaucratic rules of the CDM."[264]

BACKGROUND

Plan Vivo originated in 1994 in Mexico through a research project, which included the following research partners: the Edinburgh Centre for Carbon Management; El Coligio la Frontera Sur (ECOSUR); the University of Edinburgh; and other local organizations. The project was originally funded by the UK Department for International Development.[265]

ORGANIZATION

The Plan Vivo Foundation, a registered Scottish charity based in Edinburgh,

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[262] Stakeholders and supporters include: USAID, DFID, the Green Belt Movement, the Wildlife Conservation Society, the William J. Clinton and Hunter Foundations, Mercy Corps, World Agroforestry Centre (ICRAF), Rainforest Alliance, the Waterloo Foundation, the International Development Research Centre, the University of Edinburgh and A Rocha International.

[263] Plan Vivo, *supra* note 261.

[264] *Ibid.*

[265] *Ibid*.

develops, manages and oversees the Plan Vivo Standards (see Figure 3.1).[266] The standard's mission is to promote activities to reconcile human development and environmental change through community-based land-use projects. Plan Vivo's governance structure includes the seven-member Plan Vivo Foundation Board of Trustees, which is responsible for oversight of the standard, including approval or rejection of any amendments.[267] The Plan Vivo Foundation is responsible for overall operation of the Plan Vivo System, including: review and registration of projects; issuance of Plan Vivo Certificates (carbon offsets); review of the system in consultation with stakeholders and projects; approval of third-party verifiers; and registration of sellers of Plan Vivo Certificates.[268] The Technical Advisory Board, comprising experts in several fields,[269] provides advice on carbon accounting and technical aspects of carbon projects. As well, the stakeholder forum, which is an "informally constituted group representing the projects, members of the Plan Vivo Foundation, research partners and other users and stakeholders in Plan Vivo,"[270] provides input and feedback on Plan Vivo's standards and projects.

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[266] *Ibid*.

[267] *Ibid*.

[268] *Ibid*.

[269] Expertise includes community-based natural resource management, ecosystem services quantification and monitoring, and the development of rural livelihood programs. Specific functions of the technical advisory board are to: peer review technical documents from existing and potential Plan Vivo projects; provide recommendations on technical requirements in the Plan Vivo Standard and how they should be applied in practice; and contribute to the development of tools and methodologies to support Plan Vivo projects. See Plan Vivo, *supra* note 261.

[270] Plan Vivo. *Plan Vivo Standards* (Edinburgh: Plan Vivo, 2008) at 21 [Plan Vivo Standards].

SUSTAINABILITY

According to its stated principles, Plan Vivo is about livelihoods; transfer and continuous improvement; restoring and conserving native ecosystems; and equitable distribution of benefits.[271] All Plan Vivo projects must generate benefits to the local community and environment "by helping to diversify incomes, and by building financial, natural, human and social, and physical capital."[272] As well, projects are only permitted to use native or naturalized[273] trees, and are required to re-plant trees that die or are harvested.[274] In addition, buffer accounts are required, based on risk determination by the Foundation, in order to cover any shortfall.[275]

PART V: CARBONFIX[276]

The CarbonFix Standard (CFS) is a simple yet comprehensive carbon standard that certifies and registers carbon offsets that are generated by sustainably managed forestation projects. The goal of CarbonFix is to provide a high quality and easily applicable standard for sustainably managed forestation projects in developing countries.

BACKGROUND

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[271] Plan Vivo, *supra* note 261.

[272] Plan Vivo. *Plan Vivo Overview* (Edinburgh: Plan Vivo, 2010) at 1.

[273] Naturalized trees are non-native species that reproduce consistently and sustain populations over more than one life cycle without direct intervention by humans. See Plan Vivo, *supra* note 261.

[274] Plan Vivo Standards, *supra* note 270 at 41.

[275] *Ibid*.

[276] CarbonFix. Online: <http://www.carbonfix.info/>.

CarbonFix, a not-for profit association registered in Germany, created the CarbonFix Standard (CFS), which was released at the Climate Conference in Bali in December 2007.[277] The association, which was founded in 1999 and is comprised of scientists and experts in forestry, environment and development aid, had been accredited by the UNFCCC.

ORGANIZATION

CarbonFix operations are controlled entirely by a small staff divided into two bodies. The three members of the CarbonFix Secretariat, located in Germany, work to support project developers, offsets purchasers and certification bodies.[278] The Secretariat also handles media liaison. Meanwhile, the three-member Technical Board is responsible for continuous development of the standard and validation of projects prior to verification and registration. The CarbonFix Alliance, a network of institutions and individuals, supports the Technical Board through provision of expertise and knowledge.[279]

SUSTAINABILITY

All CFS-accredited projects are required to use best practices of sustainable forest management, including use of site-adapted non-GMO tree species. Land tenure

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[277] CarbonFix. *CarbonFix Standard: Carbon Forestation Projects v.3.1* (Stuttgart: CarbonFix, 2010) at ii [CarbonFix Standard].

[278] CarbonFix, *supra* note 276.

[279] *Ibid*.

must be clarified and conflicts resolved before the project starts.[280] Fire and pest risks must be mitigated. International Union for the Conservation of Nature (IUCN) red-listed plant and animal species must be identified and protected. At least 10% of each project area must be managed as a conservation area.[281] Project shortfalls must be made up through planting of additional trees or purchase of certificates from other certified projects. Like other standards, CarbonFix also requires buffer accounts to compensate for project failures; this is set at 30%.[282]

PART VI: CONCLUSION

In this chapter, I have introduced four voluntary forest carbon standards case studies in terms of their history, organization and sustainability commitments (see also **Appendices I-V)**. Each of the standards is operated by a not-for-profit or charitable organization and each certifies forest carbon projects. However, beyond these basic similarities, the standards fluctuate in terms of their organization, program delivery and sustainability commitments. In the following chapter, these standards will be analyzed in accordance with the governance and sustainability frameworks set out in chapter 2 in order to examine the ways in which governance characteristics influence or dictate the existence and content of articulated sustainability commitments.

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[280] CarbonFix Standard, *supra* note 277 at 22.

[281] *Ibid.* at 9.

[282] *Ibid.* at 29. Note that 20% is allocated to the CFS buffer fund, while the other 10% is allocated to a project-specific buffer fund.

CHAPTER 4: ANALYSIS

PART I: INTRODUCTION

In this chapter, the analytical tools set out in Chapter 2 will be applied to the each of the forest carbon standards' case studies described in Chapter 3. The first stage of this analysis, carried out in Part II, is application of the governance framework, which requires the examination of the governance arrangement upon which each carbon standard rests. Each governance arrangement will be analyzed according to the three dimensions: institutional, political and regulatory. Following this will be a technical and sustainability assessment that is used to examine the content of the standards in terms of the technical sustainability criteria set out in Chapter 2, including: land and title; baselines; additionality; monitoring and verification; permanence, leakage; transparency; environmental and social ecosystem integrity; livelihood sufficiency and opportunity; intragenerational equity; intergenerational equity; resource maintenance and efficiency; socio-ecological civility and democratic governance; precaution and adaptation; and immediate and long term integration.

The purpose of performing these two stages of analysis is to explore the influence of governance arrangements on the content of the standards. In particular, this analysis is concerned with the ways in which particular forest carbon standard

governance approaches might seem to emerge in alignment with particular social and environmental sustainability commitments and/or requirements contained in the standards themselves. For example, does the two-stage analysis show that standards with similar performance in terms of the sustainability criteria also occupy similar locations on the governance diagrams? It is anticipated that standards with more formal governance arrangements will perform better on the technical criteria for carbon accounting as formality is thought to be linked with more precise, or hard, regulatory outcomes. However, in terms of sustainability performance it is difficult to anticipate whether relative formality and harder regulatory outputs will be influential.

PART II: GOVERNANCE ANALYSIS

With the governance framework, as set out in Chapter 2, I examine each governance arrangement according to institutional, political and regulatory dimensions. In terms of the governance of voluntary forest carbon standards, these three dimensions can be conceptualized as roughly equating to: the organization, architecture and rules that govern the parties responsible for the development and operation of the standard (institutional); participation in the standard's development and operation (political); and implementation of the standard (regulatory). Each dimension is set out as a continuum along which each voluntary forest carbon standard is placed in accordance with the specified criteria. In the institutional dimension, I explore the organizational structure of each voluntary carbon standard with respect to its relative formality in terms of the following

criteria: structured-flexible; permanent-impermanent; and bounded-blurred boundaries. In the political dimension, each standard's range of actor types will be examined in order to determine whether it is predominantly representative of private or public interests. Finally, each standard's regulatory aspects will be explored in terms of its oversight processes and enforcement mechanisms, in accordance with Abbott's three criteria: obligation, precision and delegation. In addition, each standard will be mapped along a monocentric-polycentric continuum in each dimension. Each of the standards set out in Chapter 3 will be represented on each of the three diagrams in the series, with the vertical axes varying depending on the standard represented and the horizontal axes remaining consistent across the standards. Following analysis according to the three dimensions, inter-dimensional trends and relationships will be explored. As Treib *et al*. suggest, the most interesting part of this type of governance analysis is the exploration of whether "particular modes of decision-making are likely to produce particular policy instruments."[283] Do more formal processes lead to more stringent regulation as Treib *et al*. hypothesize? Or do these dimensions influence one another in different ways?

INSTITUTIONAL DIMENSION

The institutional dimension explores the structures that exist within each forest carbon standard's governance architecture. The dual metrics for analysis in this

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[283] Treib, *supra* note 115 at 16.

dimension are monocentric-polycentric[284] on the horizontal axis and formal-informal on the vertical axis. The formality of institutions in these governance regimes will be investigated according to the following criteria: structured-flexible; permanent-impermanent; and bounded-blurred boundaries.[285] On the horizontal axis, the carbon standards will be located according to the quantity and diversity of actors involved in the institutional architecture of each governance arrangement. This positioning reflects the monocentricity-polycentricity continuum, with centralized, hierarchical arrangements occupying the moncentric end of the continuum and dispersed, diverse arrangements occupying the polycentric end. The carbon standards will be located on the institutional diagram (**Figure 4**) in accordance with these criteria, but also relationally.[286]

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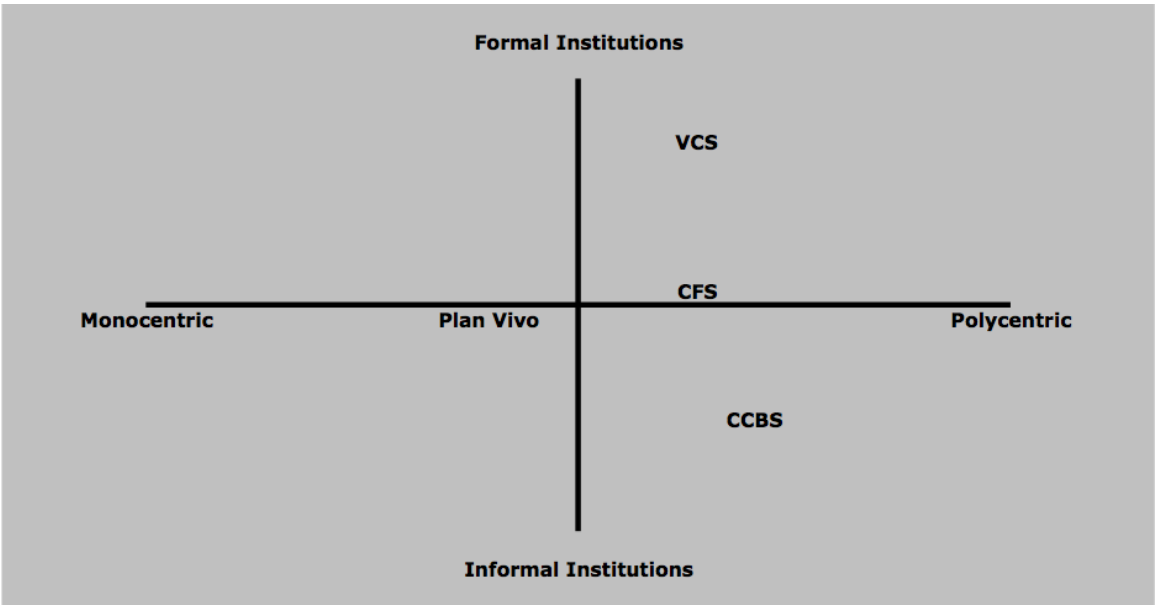
[284] See Chapter 2, Part III for monocentric-polycentric definitions.

[285] Tollefson, *supra* note 110 at 13.

[286] Figures 1-3 have been adapted from Howlett, *supra* note 132 at 385-386 and Tollefson, *supra* note 110 at 13-15.

Figure 4: INSTITUTIONAL DIAGRAM



In terms of the permanence criterion for the institutional dimension, all of the standards are operating on a permanent, rather than time-limited, basis. On the vertical axis, the VCS is the most formal. It is a broad carbon standard program with some flexibility in terms of project sectors[287] but with a structured, rule-oriented focus on the technical aspects of carbon reduction. The VCS is a permanent regime with a hierarchical[288] authority structure, clear decision-making processes and specified conflict resolution procedures. The VCS is, therefore, located towards the formal end of the vertical continuum on the institutional diagram.

In contrast, CCBS is a narrower program, certifying only land-based carbon projects, but with a broader focus on social and environmental benefits. CCBS is flexible in

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[287] VCS Program Guide, *supra* note 211 at 6.

[288] "Hierarchical" in this context refers to Trieb's definition that states that a small number of actors can make decisions that bind others. (See Chapter 2, Part III)

terms of its rules and guidance, with the entire membership acting as the decision-maker with respect to the standard and its terms of reference. That is to say, the membership sets the mandate through collaborative processes. CCBS is, therefore, significantly less formal than the VCS and is located nearest the informal end of the continuum.

Meanwhile, Plan Vivo is also quite flexible and informal institutionally, intentionally keeping rigidity and bureaucracy at a minimum. Plan Vivo requires that input from stakeholder fora and the technical advisory board regarding the standard be filtered through the Foundation, which develops the standard and controls operations, and that it is then sent for approval or rejection to the Board of Trustees. On other matters, such as the daily operation of the program, the Foundation itself has decision-making power. Despite this formality with respect to the operation of the standard, Plan Vivo projects are centred on participatory, bottom-up planning and community design. As such, Plan Vivo has been located between CCBS and the VCS on the formality continuum.

CarbonFix is somewhat less formal than the VCS but more formal than both CCBS and Plan Vivo. A focus on simplicity and quality has led CFS to adopt a more structured approach with a single rule-based methodology, which is applied to all projects.[289] As well, CFS reveals a narrow mandate addressing only projects that convert unforested lands to forests. The clearly defined decision-making of role of

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[289] CarbonFix. *CFS Methodology: Background Information Version 3.1* (Stuttgart: CarbonFix, 2010) at 1. [CarbonFix Methodology]

the technical board with respect to development and operation of the standard contributes to cumulative formality. Overall, factors combine to push CFS above Plan Vivo in terms of the formality continuum.

On the horizontal axis, the fact that the VCS is run by a professional staff with an expert Board of Directors playing an advisory role becomes an important feature. There is also a relatively large number of expert panels comprising a considerable quantity of actors from a variety of external institutional origins, including academic, not-for-profit, consulting, and private industry actors. However, despite the large number and diversity of participants, authority remains centralized in the VCS, with other actor groups playing a supportive or advisory role. Balancing these considerations, the VCS is located slightly to the right of the midline towards the polycentric end of the horizontal axis on the institutional diagram.

CCBS's institutions are primarily composed of actors from the environmental NGO (ENGO) sector, with the funding partners playing little or no role in governance institutions. CCBS has a polycentric governance regime, with the membership and committee both composed of ENGO delegates playing a direct role in institutional aspects of governance. CCBS is therefore located to the right of the midline on the horizontal axis.

Plan Vivo originated as a very monocentric research collaboration with a central locus of authority and few participants. Over time, however, participation has diversified and the number of actors has increased somewhat, particularly via

affiliated technical and stakeholder advisory groups. Despite this, the Plan Vivo governance regime remains quite monocentric, in terms of both diversity and numbers, with a relatively narrow range of actors. Authority remains centralized in the Plan Vivo Foundation, which bears responsibility for overall operation of the system with the other institutions (technical advisory groups and stakeholder fora) playing consultative or advisory roles. For these reasons, Plan Vivo is positioned just to the left of the vertical axis and closest to the monocentric end of the continuum.

CarbonFix is institutionally more polycentric than Plan Vivo, with a small professional staff and more than 60 organizations contributing to the ongoing development and improvement of the standard.[290] The number and diversity of actors rivals that of the VCS. Therefore, the horizontal location of CarbonFix is equivalent to that of the VCS.

POLITICAL DIMENSION

The political dimension focuses on the key actors, policy networks and political forces at play and within each governance regime. Analysis in this dimension investigates the political power that exists within a governance arrangement's architecture, as well as the location and allocation of that power amongst actors. In other iterations of this framework, this dimension seeks to expose "whether, and to what extent, the state or its agents are directly dictating the outcomes that emerge

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[290] CarbonFix Standard, *supra* note 277 at II.

from the governance arrangement, more loosely 'steering' the arrangement, or alternatively whether ultimate power or overriding influence lies with non-state actors."[291] However, as this project concerns governance within voluntary forest carbon standards, there is no true state agent involvement, at least in the standards selected for this thesis.

Therefore, instead of gauging the relative influence of state and non-state actors, the instrument has been recalibrated to compare the power balance between actors and groups representing private interests and those representing the public interest. For this purpose "private interest" suggests an emphasis or mandate that benefits a specific sector or group in society, while "public interest" is taken to be representative of public concerns and values that benefit society as a whole, such as biodiversity.[292] This is a somewhat fastidious distinction in the context of forest carbon standards, because all of the standards have carbon reduction – which is a public concern and benefits global society – as a primary goal. Therefore, public values other than carbon reduction, such as biodiversity and poverty reduction, are the foundational considerations when determining location on the vertical axis in this dimension. Forest carbon standards will be located on the political diagram (**Figure 5**) in accordance with their loci of political power.

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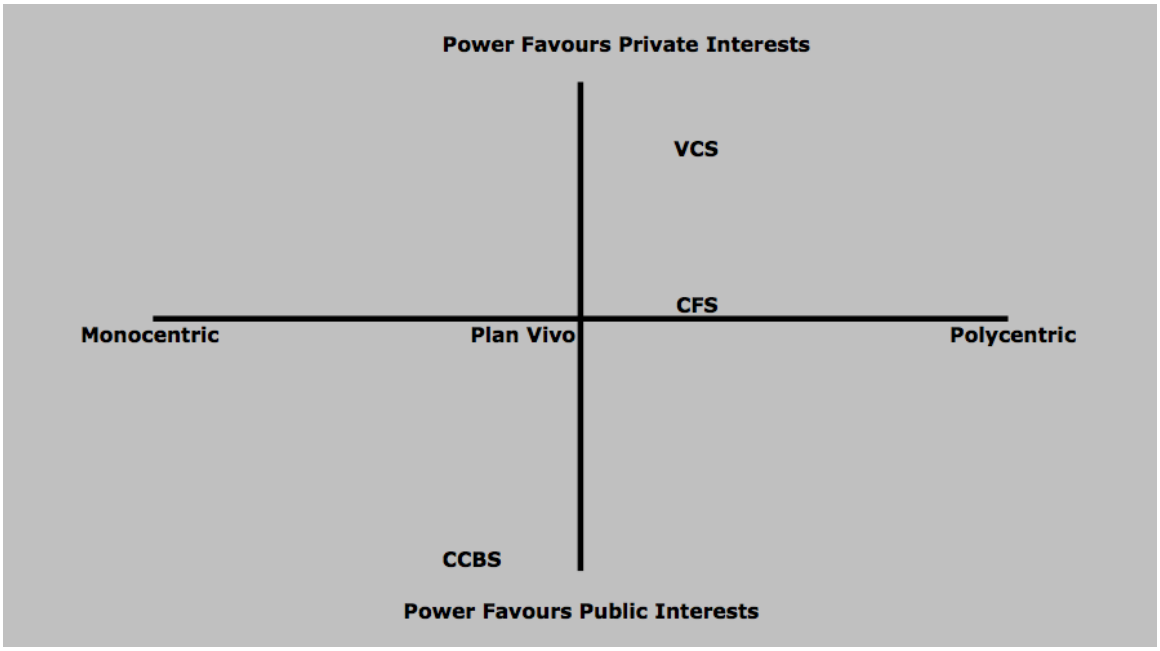
[291] Tollefson, *supra* note 110 at 13.

[292] David Truman. *The Governmental Process, Political Interests and Public Opinion,* 2nd ed., (Berkley: Institute of Governmental Studies, University of California, 1971, reprinted 1993).

Figure 5: POLITICAL DIAGRAM



In this dimension, the power/influence balance of actors within each governance arrangement is considered. Within the somewhat polycentric institutional configuration of the VCS, the common denominator amongst actors possessing power/influence seems to be a business and/or industry interest orientation. Even many of the NGO and academic actors originate from organizations and faculties with a business bent; there are, however, some environmental and sustainable development NGO participants.[293] On balance, the VCS leans towards the private interest end of the political spectrum and retains the same position on the horizontal axis as seen in the institutional dimension. In contrast, CCBS is on the opposite side of the vertical axis, with actors representing a fairly committed public-interest perspective. On the horizontal axis, the location of CCBS shifts to the left in

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[293] For a full list of members of each VCS committee and advisory group, see VCS, *supra* note 209.

order to reflect its low diversity in terms of actor types, with heavy ENGO representation. Plan Vivo rests between these two on both the horizontal and vertical axes, with a somewhat more balanced political legacy. The original Plan Vivo was a project of the UK government in collaboration with specific business and development-oriented academic partners. Its current governance arrangement reflects a greater public-interest orientation, resulting in Plan Vivo's placement between the VCS and CCBS. CFS also rests between the extremes of the VCS and CCBS on the vertical axis, with a small technical board controlling and directing the program's mandate in a way that benefits both public and private interests, with ongoing input and influence on development and improvement from more than 60 organizations on an advisory-type basis.

REGULATORY DIMENSION

This dimension focuses on the regulatory aspects of each governance arrangement. The vertical axis in this dimension is adopted from international law's characterization of international regimes, with hard law at the "north pole" and soft law at the "south pole". It is useful to conceptualize a continuum from hard law to soft law, rather than a dichotomy.[294] As Shaffer and Pollack note, this

[294] Abbott, *supra* note 177 at 401.

conceptualization presents a spectrum of regulatory choices facing state and non-state actors rather than a choice between binary categories.[295]

There are three main dimensions of hard law: obligation, precision and delegation. "Obligation" refers to the adoption by parties of credible commitments to be bound by a rule or set of rules.[296] "Precision" means that the rules unambiguously define the behaviour that is prescribed, regulated or prohibited.[297] "Delegation" refers to the granting of authority to third parties to implement, interpret and apply the rules; resolve disputes; and make new rules.[298] When all three dimensions are present, regulation can be considered to be hard law. Soft law exists when there is weakness in terms of one (or more) of these three dimensions. Analysis of this dimension will also consider the standards in terms of Treib Model's proposed typology of governance modes in the "policy" dimension.[299]

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[295] Gregory Shaffer & Mark Pollack. "Hard Law vs. Soft Law: Alternatives, Complements and Antagonists in International Governance" (2010) 94 Minnesota Law Review 706 at 716.

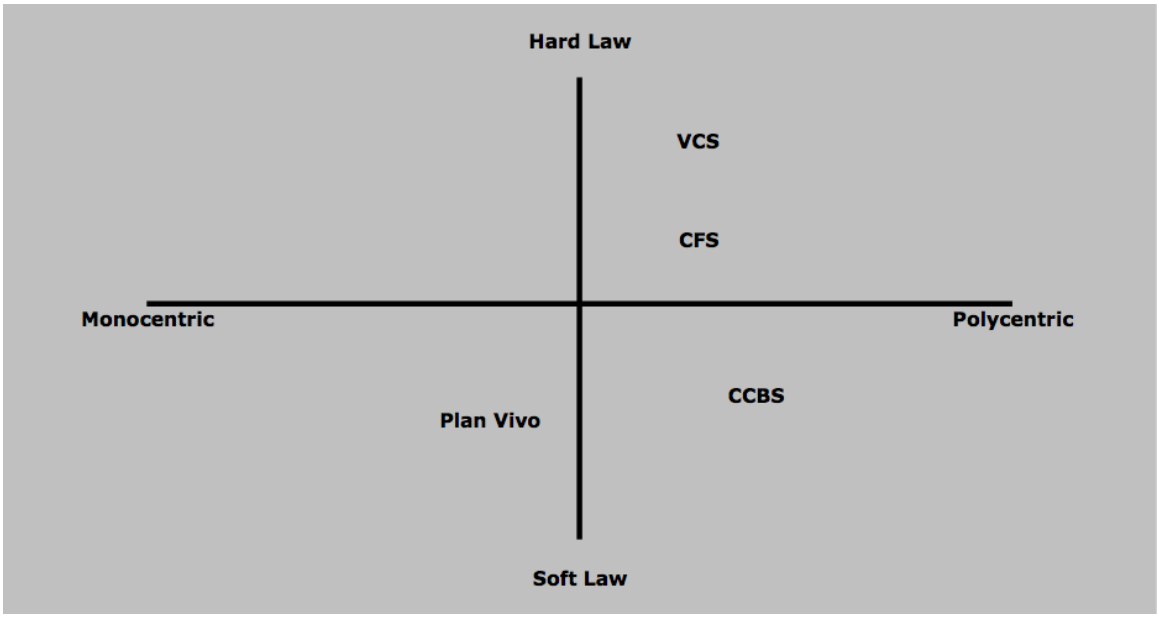
[296] *Ibid*.

[297] *Ibid*.

[298] *Ibid*.

[299] As mentioned in Chapter 2, this typology includes four modes of governance, they are: coercion, voluntarism, targeting and framework analysis.

Figure 6**: REGULATORY DIAGRAM**



In terms of the vertical dimension, the VCS may appear flexible in its permission of the application of any number of methodologies. However, the VCS is high in obligation, requiring that any methodology used must meet the rules and requirements of the VCS, be approved through its methodology approval process, and result in the achievement of binding criteria before carbon offsets are able to be certified and registered. The precision factor is also met through unambiguous rules defining that which is prescribed, regulated or prohibited.[300] The VCS program makes use of delegation via independent third-party validation/verification bodies, but requires their accreditation.[301] This extends to accreditation for each geographic location and project sector. In addition, new methodologies require approval through a dual approvals process in which two

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[300] Abbott, *supra* note 177 at 401.

[301] See VCS Program Guide, *supra* note 211 at 14 for accreditation requirements.

separate third parties are engaged to carry out the audits.[302] As well, the VCSA retains authority to decide complaints and appeals, certify auditors and impose sanctions.[303] This system of checks and balances results in the VCS meeting Abbott's three dimensions of hard law and is thus located towards the hard law end of the vertical regulatory axis, while retaining its original position on the horizontal axis.

In contrast, obligation requirements of CCBS are much less stringent, as it is a more flexible scheme in which project-specific methodologies are developed and the satisfaction of optional criteria can result in a higher certification level. Although approvals occur according to CCBS criteria, the levels of obligation and precision are significantly lower than those for the VCS. Delegation exists in CCBS through the use of approved independent third-party auditing and verification bodies. However, the program permits projects to select their own auditors and also permits validation and verification to be performed by the same body. Approval by an approved auditing body results in automatic CCBS certification of a project. However, CCBA retains authority to suspend or remove auditors. On balance, CCBS leans towards the soft law end of the regulatory continuum, while shifting back to its original position on the horizontal axis due to the participation of additional actors in this dimension.

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[302] *Ibid.* at 15.

[303] *Ibid.* at 18-19.

Plan Vivo is also located towards the soft law end of the continuum, with a lower degree of precision and obligation present in performance-based project-specific oversight. Like the others, Plan Vivo verification is delegated to independent third-party auditing bodies. Plan Vivo is more flexible in other respects as well, for example, in terms of the acceptance of both *ex post* and *ex ante* methodologies, with similar requirements for both.

CFS, despite its apparent simplicity, is closer to the hard law end of the continuum than either CCBS or Plan Vivo. CarbonFix delegates both validation and verification to independent third parties. However, CFS requires that all projects follow the same methodology, which is based on the 2006 IPCC Guidelines. As such, specified criteria must be met in order to achieve project certification, and regular monitoring occurs at specified intervals, resulting in higher levels of obligation and precision than are seen with CCBS and Plan Vivo.

GOVERNANCE SUMMARY

The preceding analysis has served to elucidate some of the differences between "new governance" arrangements in the context of voluntary forest carbon standards. In particular, the VCS is the most formal and rule-oriented of the voluntary forest carbon standard governance arrangements explored, with its private interest market orientation and strict focus on technical requirements for offset credibility. The VCS occupies the upper right quadrant in each diagram. Explanations for this may be found within the VCS program objectives, which

include the establishment of clear rules and procedures, as well as the goal of demonstrating "workable frameworks and [...] lessons that can be incorporated into other GHG programs and climate change regulation."[304] This goal of incorporation, coupled with an intention that offsets be saleable in both the voluntary and compliance markets, serves to explain the formality and rule-based orientation of the VCS. However, despite its obvious formality, the VCS displays many of the hallmarks of new governance, such as mechanisms allowing for implementation of multiple methodologies, as well as the stimulation of innovation though compensation for methodology developers.

Like the VCS, CFS also occupies the upper right quadrant in each of the three diagrams. This placement reflects its UNFCCC legacy and IPCC-influenced approach to certification methodology. However, in contrast to the VCS, the other three standards all adopt a more flexible approach and all include community and environmental benefits as central tenets of their mandates. In terms of the hallmarks of new governance as espoused by Scott and Trubek,[305] Plan Vivo is perhaps the most significant exemplar of power sharing, participation and multi-level interaction displayed by participatory, bottom-up planning and community-led design.[306] Deliberation is visible in all of the standards, particularly CCBS, with its

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[304] VCS Program Guide, *supra* note 211 at 5.

[305] As mentioned in Chapter 2, the hallmarks of "new governance" include participation and power-sharing; multi-level interaction; diversity and decentralization; deliberation; flexibility and revisability; and experimentation. See Scott, *supra* note 111.

[306] Plan Vivo, *supra* note 261.

member-based decision-making style. As well, all of the standards explored embody flexibility and revisability, as well as experimentation, which are often touted as the greatest features of the VCM.[307] The trend that emerges from this analysis tends to support the Treib hypothesis that more formal institutions do lead to harder regulatory instruments, as seen with the VCS and CFS cases. Meanwhile, it seems that more participatory and consensus-based institutions may indeed lead to softer and more flexible regulatory instruments, as seen with CCBS and Plan Vivo.

In the next stage of analysis, I will explore each of the standards in relation to sustainability criteria. The commitment each standard makes to sustainability is a reflection of the influences of the institutions, actors and regulatory aspects of each governance arrangement. By viewing these results in tandem, we may begin to see which governance styles reflect more serious commitments to ensuring project sustainability.

PART III: SUSTAINABILTY AND TECHNICAL ANALYSIS

In this section, each of the voluntary forest carbon standards will be examined in terms of sustainability commitments and offset credibility. The first set of relative performance considerations relates to the simple presence or absence of articulated commitments to the criteria, including: presence or absence of articulated commitment to each criterion; incorporation of all criteria in a particular category; incorporation of all criteria in each of the three categories. Standards that

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[307] See Bayon, *supra* note 47 at 12; Exergia, *supra* note 87 at 3.

incorporate a particular criterion will be considered to have better performance than those that fail to include that criterion, and those standards that incorporate more/all criteria will be considered to have "better" performance than standards that do not. The second consideration relates to the relative quality of each standard's commitments to each of the included criteria. The relative quality will be determined by considering the comprehensiveness of the content of articulated commitments, with more clearly detailed commitments being considered to have "better" performance that those that are vague or undefined. Another factor in ranking the relative quality of articulated sustainability commitments is the manner in which the standards ensure that each articulated criterion is met. Those standards that require independent third-party assessment are deemed to have taken a more rigorous approach. It is important to reiterate here that the central focus of this stage of analysis is sustainability. Therefore, underlying all inclusion and assurance considerations is the foundational concern for whether the chosen measures promote sustainability. As well, it is worth restating that CCBS does not certify carbon offsets. Therefore, some of the criteria discussed, particularly those relating to the technical requirements of credible carbon offsets, are not applicable to CCBS and its certified projects. As discussed in Chapter 2, each of the voluntary forest carbon standards will be considered in terms of whether, and in what manner, each incorporates and verifies fulfillment of each of the particular criteria set out below.[308] A central question at this stage of the inquiry is whether standards

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[308] A comprehensive consideration of how articulated sustainability commitments

that perform well on the technical requirements can also perform well on the sustainability assessment criteria. The VCS' emphasis on technical requirements and absence of social and environmental benefits coupled with CCBS focus on sustainability implies that this may not be the case, at least for some standards.

LEGAL COMMITMENTS

This category explores the foundational legal requirements found within each voluntary forest carbon standard. The criteria for consideration with respect to this category include: ownership and tenure requirements for forest project lands; compliance requirements for federal, state and local laws; dispute resolution mechanisms; and sanctions.

OWNERSHIP/TENURE REQUIREMENTS

All of the standards include tenure requirements for project lands. However, among the standards examined, the VCS alone does not require that ownership tenure and land use rights for project lands be both legally documented and undisputed. The VCS does require that either proof of title or right of use[309] be provided.[310] As well, the VCS AFOLU requirements set out a variety of conditions that apply to situations

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are implemented at the project level is beyond the scope of the research undertaken for this project. This is an area for future research.

[309] VCS accepts a right of use arising from statutory, property or contractual sources. See VCS Program Guide, *supra* note 211 at 15-16.

[310] VCS AFOLU, *supra* note 215 at 7.

in which the proponent does not (yet) control the project lands.[311] The VCS ensures that this criterion is met by having the project description accompanied by proof of title.[312] As well, the VCS requires that proponents make the project description as well as proof of title and supporting information available to the validation/verification body.

CCBS is, perhaps, the most comprehensive in terms of tenure, requiring a description of "customary and legal property rights including community property" as well as of "any ongoing or unresolved conflicts" and "disputes over land tenure that were resolved over the last ten years".[313] Where ongoing disputes exist, CCBS requires that the project demonstrate how it will help to resolve them prior to the project start.[314] This information is submitted for audit by an independent accredited auditing body. [315]

Plan Vivo certifies projects in rural communities where tenure is secured through ownership or long-term user rights.[316] Since Plan Vivo projects are community-based, the producers own or possess user rights to project lands. Producers can be individuals, cooperatives, associations or community-based organizations. Each Plan Vivo project is required to have a governance structure that is capable of core

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[311] *Ibid.* at 7-8.
[312] VCS. *VCS Standard: Version 3* (Washington: VCS, 2011) at 14-15 [VCS Standard].
[313] CCBA Standards, *supra* note 235 at 13.
[314] *Ibid.* at 20.
[315] CCBA Standards, *supra* note 235 at 8.
[316] Plan Vivo Standards, *supra* note 270 at 15, 29.

project functions such as checking land tenure. Tenure information constitutes part of the information provided by the project coordinator to the Plan Vivo Foundation, which performs a desk-based review of the project prior to its registration.[317]

CFS requires that the project developer show "long-term uncontested title" as well as long-term permits (as needed) for project implementation.[318] This information must be provided by the project developer to the third-party certification body at initial certification, monitoring certification and management unit certification.[319] Certification bodies confirm satisfaction of criteria through desk review, literature confirmation, field visits and interviews.[320] CFS also requires, as a pre-condition, a historical and current use description of the project area for the past 50 years.[321]

LEGAL COMPLIANCE

All of the standards require project compliance with all applicable federal, state and local laws. The VCS requires that compliance be shown through "identification and demonstration of compliance with relevant laws, statutes and other frameworks"[322] in the project description, and further requires that compliance be met regardless of

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[317] Plan Vivo Standards, *supra* note 270 at 28. This is referred to as the Project Idea Note (PIN).

[318] CarbonFix Standard, *supra* note 277 at 22.

[319] *Ibid.* at 25.

[320] *Ibid.* at 26.

[321] *Ibid.* at 7.

[322] VCS Standard, *supra* note 312 at 20.

whether the laws are being enforced.[323] The project description must be made available for review by the validation/verification body.

CCBS requires that projects submit a list of all relevant national and local laws and regulations in the host country, as well as applicable international treaties and agreements. Projects must provide assurance that the project will comply with these and, where relevant, demonstrate how compliance is to be achieved. In addition, projects must provide documentation of project approval by authorities, including formal and traditional community authorities. Further, proponents must demonstrate through consultations and agreements that projects will not encroach on private or community property, unless free, prior and informed consent is first obtained from owners and residents. [324] This information is subject to independent third-party review during validation/verification.

Plan Vivo project coordinators are expected to ensure compliance with all applicable regulations at all levels prior to implementing project activities[325] and the Plan Vivo Foundation assesses host-country approval of projects prior to registration.[326] Meanwhile, CFS requires a contractual declaration of compliance with all applicable national and international laws, as well as an agreement to

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[323] VCS AFOLU, *supra* note 215 at 5.

[324] CCBA Standards, *supra* note 235 at 20.

[325] Plan Vivo. *The Plan Vivo Manual: Guidance of Developing Projects* (Edinburgh: Plan Vivo) at 18.

[326] Plan Vivo Standards, *supra* note 270 at 28.

immediately report any conflicts.[327] While different approaches are taken, all of the standards satisfy this criterion. Mechanisms for assurance also vary, with the VCS and CCBS employing third-party review, Plan Vivo's Foundation being responsible for assurance and CFS employing a contractual model. Overall, the rigor of its third-party review mechanism, coupled with its inclusion of broader considerations, makes CCBS the best performer in terms of this criterion.

DISPUTE RESOLUTION

Most of the standards set out conflict resolution mechanisms or processes, although they vary widely in approach. For example, the VCS internalizes dispute resolution. The VCSA is empowered to deal with these matters under the VCS. Meanwhile, CCBS takes the opposite approach, allotting this task to the projects themselves, requiring that a documented conflict and grievance resolution process be formalized in project design and that the mechanism include a process for hearing, responding to and resolving grievances within a reasonable time. Further CCBS requires that the process be managed by a third-party mediator and be publicized to the community and other stakeholders. The project managers are required to provide a written response within 30 days.[328]

The CFS incorporates a similar, albeit less detailed, approach to that taken by CCBS, requiring that management staff provide evidence that stakeholder concerns are

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[327] CarbonFix. *CFS v3.1*: *General Terms & Conditions* (Stuttgart: CarbonFix, 2011) at 1.

[328] CCBA Standards, *supra* note 235 at 17.

being documented and responded to appropriately by management staff.[329] This "evidence" is provided at every verification. Plan Vivo does not mention conflict resolution mechanisms or processes in its standards or summary documents.

Overall, despite the off-loading of financial burdens to proponents, the CCBS approach is the most rigorous, as it requires dispute process management by an independent third party.

SANCTIONS

In terms of sanctions, the VCS approach is to refuse registration or delist offending projects and/or refuse to issue VCUs; these tasks fall under the purview of the VCS Board, which has final say on all appeals and is also responsible for taking action against offending validators/verifiers and registries.[330]

Plan Vivo takes a more sympathetic approach, imposing corrective action with a timeframe for compliance where "an annual report or project database shows a violation of Plan Vivo Standards".[331] However, the imposition of corrective actions does not affect the status of a project or the issuance of certificates unless "the project is found to be operating in a manner that grossly contradicts the aims and principles" of Plan Vivo or the corrective action is not completed within the

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[329] CarbonFix Standard, *supra* note 277 at 11.
[330] VCS Program Guide, *supra* note 211 at 10.
[331] Plan Vivo Standards, *supra* note 270 at 36.

specified timeframe.[332] In either event, registration is suspended pending resolution. Failure to resolve the issues, or the presence of irresolvable issues, results in termination of registration.[333]

CFS contemplates that projects may be certified with minor Corrective Action Requests, which are of limited scale and must be correctable within six months.[334] The technical board will exclude projects that allow their certification to expire, or that do not meet CFS requirements. Exclusion of a project results in the cancellation of all its CO_2 certificates.[335]

CCBA possesses a discretionary right to revoke any CCBS-certified project at anytime. As well, if CCBA acquires information about a project's failure to meet CCBS standards, it will provide this information to the auditor, who must then determine whether project status has been affected and report back to the CCBA. The project proponent must assist the auditor in obtaining information in order to make a determination and the proponent and/or auditor must assume the costs of the inquiry. If the proponent cannot satisfy the auditor and/or CCBA the project may be removed from the CCBA list of approved projects.[336]

All of the standards surveyed include this criterion. However, CCBS alone requires

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[332] *Ibid.*

[333] *Ibid.*

[334] CarbonFix Standard, *supra* note 277 at 25.

[335] *Ibid.* at 25, 28.

[336] CCBA. *CCB Standards: Rules for the use of the Climate, Community & Biodiversity Standards* (Arlington, VA: CCBA, 2010) at 17. [CCBS Rules]

independent third-party assurance; therefore, it is considered to be the best performer.

Table 6: LEGAL COMMITMENTS CRITERIA SUMMARY

Criterion	Commitment	No Commitment	Strong Performance	Weak Performance
Tenure	ALL		CCBS	VCS
Compliance	ALL		CCBS	
Conflict	ALL		CCBS	Plan Vivo
Sanctions	ALL		CCBS	

Overall, CCBS sets out the most comprehensive approaches to legal commitments. However, its approaches to tenure, conflict resolution and sanctions share a common theme of offloading the costs and responsibilities to project proponents. In contrast, the VCS is considered to be the least concerned with disputed tenure and other rights of use as it contemplates projects in the absence of undisputed tenure and fails to consider traditional use. As well, its dispute resolution and sanctions mechanisms are more centralized and not subject to third-party oversight. CFS and Plan Vivo adopt similar, although perhaps less comprehensive, tenure requirements to those of CCBS. In terms of sanctions, these two standards are the most project-friendly, encouraging correction of outstanding issues prior to suspension or cancellation, which occurs through centralized processes.

TECHNICAL REQUIREMENTS

This category addresses the technical requirements for carbon accounting. Criteria for consideration are those generally accepted criteria[337]that lead to credible carbon offsets, including: baselines;[338] additionality;[339] monitoring and verification;[340] permanence;[341] leakage;[342] and transparency.[343]

BASELINES[344]

This criterion refers to the reference point against which future emission reductions or carbon sequestrations are measured. None of the standards examined employs a base year approach to baselines. However, according to the World Wildlife Fund's Forest Carbon Standards Assessment Guide, standards should require a conservative approach to baselines.[345] The VCS,[346] Plan Vivo[347] and CFS[348] all

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[337] See for example Pedro Costa *et al*. "Elements of a Certification System for Forestry-Based Carbon Offset Projects" (1999) 5 Mitigation and Adaptation Strategies for Global Climate Change 39.

[338] Beane, *supra* note 56 at 12-13.

[339] *Ibid.* at 13-14.

[340] *Ibid.* at 14-15.

[341] *Ibid.* at 15-16.

[342] *Ibid.* at 16.

[343] *Ibid.* at 17.

[344] Beane, *supra* note 56 at 12-13.

[345] WWF, *supra* note 56 at 13.

[346] VCS AFOLU, *supra* note 215 at 28.

[347] Plan Vivo Standards, *supra* note 270 at 32.

[348] CarbonFix Methodology, *supra* note 289 at 3.

require the use of a conservative approach, with the VCS[349] requiring recalculation of the baseline every 10 years and CFS calling for the overestimation of baselines.[350] Plan Vivo includes the calculation of baselines at the project level as well as modelling at the regional level. CCBS requires that projects be measured against a "without project" reference scenario[351] and that baselines "be based on clearly defined and defendable assumptions about how project activities will alter carbon stocks and non-CO2 GHG emissions."[352] All of the standards include this criterion and all of the standards employ independent third-party assurance of fulfillment. Overall, the VCS approach is preferred for baselines because of its recalculation requirements.

ADDITIONALITY[353]

This criterion addresses the concept that project emission reductions or removals must be beyond what is required. As well, additionality represents the uniqueness of the credits being sold and prevents double counting. All projects certified under all standards, including CCBS, require basic additionality in that they must exceed regulatory requirements and other legal mandates. CCBS also requires proponents to demonstrate that the resulting benefits would be unlikely to occur without the project.

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[349] VCS AFOLU, *supra* note 215 at 6.
[350] CarbonFix Standard, *supra* note 277 at 14.
[351] CCBA Standards, *supra* note 235 at 14.
[352] Kollmuss 2010, *supra* note 56 at 177.
[353] Beane, *supra* note 56 at 13-14.

CFS, as of Version 3.1 (the most recent version) allows "no other means than the A/R CDM additionality tool" and "limits the validity of an additionality check to 10 years".[354] The VCS also widely employs the CDM additionality tool. Plan Vivo additionality is less rigorous, approving both *ex post* and *ex ante* credits.[355] Additionality tools for Plan Vivo are project-based and must be demonstrated through an analysis of the barriers to implementing "the project and activities supported by the project were it not for the availability of carbon finance".[356] All three standards discussed above require third-party assessment of performance on this criterion. As credits are not generated by certified projects, this aspect of additionality does not apply to CCBS. All of the standards that certify offsets require registration and tracking in order to demonstrate that the project's credits have not been sold as offsets more than once, and that project credits will be permanently retired once they are sold. On the whole, the VCS and CFS take a similar approach resulting in better performance in terms of additionality than either Plan Vivo, which permits *ex post* and *ex ante* credits, or CCBS, which does not consider all aspects of this criterion.

MONITORING AND VERIFICATION[357]

This criterion describes the activities that should take place to ensure there is

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354 CarbonFix. *What's New in Version 3.1?* (Stuttgart: CarbonFix, 2010).
355 Plan Vivo Standards, *supra* note 270 at 40.
356 Kollmus 2010, *supra* note 56 at 182.
357 Beane, *supra* note 56 at 14-15.

ongoing and independent measurement and oversight of the project's activities, progress, and impacts. All of the standards impose monitoring requirements for the life of all certified projects to ensure that commitments are met. There is also a project-specific risk assessment and buffer requirement in place for each of the standards that certify offset generating projects. And all of the standards, including CCBS, require regular monitoring. As well, all standards require that a third party regularly review the project to verify accuracy and attainment of project goals.

VCS requires methodology-specific monitoring and a monitoring plan that includes a system for "obtaining, recording, compiling and analyzing data and information important for quantifying and reporting GHG emissions and/or removals relevant for the project (including leakage) and baseline scenario" as well as definition of associated roles and responsibilities.[358] Monitoring reports must be made available to third-party validation/verification bodies. However, one negative aspect of the VCS monitoring and verification requirements is the allowance of validation and verification by the same auditor.[359] As well, successful verification results in automatic approval of the project.[360]

CCBS also allows the same auditor to perform both validation and verification.[361] While this approach reduces the administrative burden on both the proponent and

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[358] VCS Standard, *supra* note 312 at 18-19.
[359] *Ibid.* at 27.
[360] Kollmuss 2010, *supra* note 56 at 162-163.
[361] *Ibid.* at 163.

the standard, it increases the decision-making power of the auditors, resulting in a potential conflict of interest, as auditors are selected and paid by project proponents.[362] Verification is required every five years through a project document review and site visit.

Plan Vivo also requires independent third-party verification every five years. However, Plan Vivo may commission validators directly.[363] Plan Vivo project coordinators monitor projects over time, so that when participants meet agreed monitoring targets, a payment can be made, providing continued incentives.[364] As well, the Plan Vivo Foundation is responsible for decisions about the registration and status of projects, and annually reviews projects based on self-assessment reports.[365] Finally, third-party verifiers assess projects based on terms of reference that are agreed upon by the project coordinators, verifiers and the Plan Vivo Foundation.[366]

CFS displays the best performance with respect to this criterion, requiring that strict verification intervals be followed, with regular monitoring at two years, four years, and then every five years for the duration of the project.[367] As mentioned

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[362] *Ibid.*

[363] Plan Vivo Standards, *supra* note 270 at 24.

[364] Plan Vivo, *supra* note 261.

[365] Plan Vivo Standards, *supra* note 270 at 19.

[366] *Ibid.* at 24.

[367] Eduard Merger. "Forestry Carbon Standards 2008: A Comparison of the Leading Standards in the Voluntary Market and the State of Climate Forestation Projects" at 31, online: (2008) Carbon Positive <http://www.carbonpositive.net>.

previously, CFS certification methods include desk review literature confirmations, field visits and interviews. In addition, CFS applies the same requirements to every project and requires that socio-economic and environmental impacts be documented and updated at the end of each verification interval.

PERMANENCE[368]

This criterion addresses the length of time carbon stocks must be maintained, whether measures will be taken to help prevent carbon loss, and what measures will be taken if carbon loss does occur. The CCBS does not incorporate specific performance requirements for this criterion and has no rules about crediting periods.[369] The three standards that certify offsets projects require the use of a similar risk management strategy, which includes a non-permanence risk analysis and buffer approach, to guard against carbon losses.

The VCS utilizes a variable buffer of 10-60% depending on each project's non-permanence risk analysis. Minimum project length under the VCS is 20 years and 100 years is the maximum.[370] Proponents are required to include the start date and crediting period information in the project description, which is made available to validation/verification bodies.[371] The VCS also requires a non-permanence risk

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[368] Beane, *supra* note 56 at 15-16.
[369] Kollmuss 2010, *supra* note 56 at 176-178.
[370] VCS Standard, *supra* note 312 at 13.
[371] *Ibid*. at 20.

report at validation and verification, as well as at subsequent verifications.[372]

Like the VCS, Plan Vivo also adopts a variable buffer depending on risk assessment. As well, Plan Vivo requires a minimum 10-year project life (maximum 100 years), with 10-year crediting increments and verification every five years.[373] In contrast, CFS employs a standard 30% buffer for all projects, with 10% allocated to a project-specific buffer account and 20% to a pooled buffer account. The CFS employs a minimum project life of 30 years and a maximum crediting period of 50 years. Both Plan Vivo and CFS obtain assurances via third-party audits.

Plan Vivo and CFS require the identification and mitigation of risks to permanence.[374] Unlike Plan Vivo[375] and CFS, the VCS does not require replacement of lost carbon stocks; instead, a loss report is submitted to the VCS registry and credits from the buffer pool equivalent to the reported loss will be put on hold.[376] Failure to report losses within the specified time result in the project becoming ineligible.[377] However, if the lost carbon stocks are replaced prior to the end of the monitoring period, the credits will be released but will remain in the buffer fund.[378] Despite the VCS' strict requirements for risk reporting, both CFS and Plan Vivo

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[372] VCS AFOLU, *supra* note 215 at 9-10.
[373] Plan Vivo Standards, *supra* note 270 at 31.
[374] *Ibid.* at 32.
[375] Kollmuss 2010, *supra* note 56 at 184.
[376] VCS AFOLU, *supra* note 215 at 10-11.
[377] *Ibid.* at 9.
[378] *Ibid.* at 10.

adopt a stronger approach to risk in that each requires action to mitigate/counteract risk events before the buffer is used. For this reason, coupled with its pooled buffer approach and longer minimum project length, CFS is considered to have the best performance in terms of this criterion.

LEAKAGE[379]

This criterion addresses assessing and avoiding/accounting for the internal and external leakage that might result from forest carbon projects. "Internal leakage" refers to the loss of emissions benefits related to a project due to increased emissions generation at a different site controlled by the same proponent. "External leakage" refers to the loss of emissions benefits related to a project due to an increase in emissions outside of the proponent's control. All of the standards reviewed require independently-reviewed assessment of all potential sources of internal and external leakage.

In addition to requiring leakage assessments in the project description and monitoring report,[380] the VCS encourages proponents to make use of leakage management zones to minimize displacement of land use activities to outside of project areas.[381] As well, the VCS subtracts leakage from the number of offsets eligible for issue.[382] Plan Vivo employs a similar formula to subtract unavoided

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[379] Beane, *supra* note 56 at 16.
[380] VCS AFOLU, *supra* note 215 at 9.
[381] *Ibid.* at 8-9.
[382] *Ibid.* at 9.

leakage at the project level and requires leakage minimization at the individual plot level by requiring producers to show that they are not reducing agricultural output below sustainable levels.[383] CCBS adopts a similar approach, requiring the subtraction of unmitigated leakage from project benefits claimed.[384] CFS employs the most comprehensive approach through the use of more specific calculation formulas for subtractions of unavoided leakage associated with six different categories of leakage.[385]

TRANSPARENCY[386]

This criterion addresses the availability of project methodologies, data, and documents to a project verifier and other third parties, including the public. All of the standards surveyed require that project documentation, as well as validation and verification reports, be publicly available, and each standard's organization operates a website in fulfillment of this objective. All of the standards perform well when considering this criterion.

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[383] Kollmuss 2010, *supra* note 56 at 183.

[384] *Ibid.* at 178.

[385] These categories are fuel wood use, charcoal burning, timber harvesting, agricultural farming, resettlement and livestock grazing. See CarbonFix Standard, *supra* note 277 at 19.

[386] Beane, *supra* note 56 at 17.

Table 7: TECHNICAL REQUIREMENTS CRITERIA SUMMARY

Criterion	Commitment	No Commitment	Strong Performance	Weak Performance
Baselines	ALL		VCS	CCBS
Additionality	ALL		VCS & CFS	CCBS
Monitoring	ALL		CFS	
Permanence	VCS, PV, CFS	CCBS	CFS	
Leakage	ALL		CFS	
Transparency	ALL		ALL	

The VCS and CFS incorporate all of the criteria in the technical requirements category. Despite this, there are some shortcomings of both standards. For instance, the allowance of validation and verification by the same third party poses a potential for conflicts of interest to arise, as third parties are selected and paid by project proponents. Third parties are therefore susceptible to pressures as they struggle to maintain good relationships with their clients while trying to provide an unbiased service. Both Plan Vivo and CCBS perform less well than the VCS and CFS. Plan Vivo's major weakness is the allowance of both *ex poste* and *ex ante* credits. CCBS, as it does not certify offsets, fails to include some of the criteria in this category.

SUSTAINABILITY CRITERIA

SOCIO-ECOLOGICAL SYSTEM INTEGRITY[387]

This criterion describes how each standard deals with the project-level assessment of positive and negative environmental, social, and economic impacts, as well as any actions required for prevention and/or mitigation of negative impacts.[388]

The VCS requires that project proponents identify and mitigate potential negative impacts but does not require that projects demonstrate social or environmental benefits.[389] The VCS does require that summaries of environmental impact assessments and stakeholder consultations be included in the project description, which is made available to the validation/verification bodies.[390] Each of the other three standards requires the identification and mitigation of negative impacts, as well as demonstration of social and economic benefit, as verified by independent third parties.[391]

Despite the VCS not requiring environmental benefits, all four of the standards reviewed prohibit the conversion of natural ecosystems to project lands. CFS

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[387] Gibson, *supra* note 123 at 235.

[388] Beane, *supra* note 56 at 17.

[389] VCS AFOLU, *supra* note 215 at 5.

[390] VCS Standard, *supra* note 312 at 21.

[391] CarbonFix Standard, *supra* note 277 at 10-11; CCBA Standards*, supra* note 235 at 6; and Plan Vivo Standards, *supra* note 270 at 17.

disallows projects where the land was deforested to generate CO_2 certificates; is a wetland; is situated on permafrost; or is agricultural land and threatens food security of the local population through conversion to forest.[392] The standards, with the exception of the VCS, also require protection of irreplaceable features, such as IUCN red-listed species and habitats.[393] CCBS, CFS and Plan Vivo deal with this criterion appropriately and satisfactorily and are considered to have good performance, while the VCS does not.

LIVELIHOOD SUFFICIENCY AND OPPORTUNITY[394]

This criterion assesses whether each standard requires inclusion of local communities in certified carbon projects, as well as the way(s) that projects provide economic and livelihood opportunities and/or provide or enhance access to basic resources and essential services. VCS projects are not required to involve or benefit the local community. VCS project requirements extend only to stakeholder consultations and communication mechanisms.[395] In contrast, the other standards all require positive community benefits and all employ third-party review mechanisms for assurance.

Plan Vivo requires that projects be community-led, with community members comprising the producers of each project and payments going directly to these

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[392] CarbonFix Standard, *supra* note 277 at 7.
[393] *Ibid.* at 10.
[394] Gibson, *supra* note 123 at 235.
[395] Kollmuss 2010, *supra* note 56 at 159.

producers.[396] CCBS is designed to encourage sustainable livelihood and requires net positive social and economic benefits.[397] This is assessed by comparing "with project" and "without project" scenarios for all community groups.[398] CCBS also requires project proponents to submit a list of all laws and regulations covering workers' rights in the host country, as well as a description of how the project will inform workers about their rights and ensure that the project meets or exceeds legal requirements.[399] As well, CCBS Gold Level certification requires social impact monitoring that takes a differentiated approach that can identify positive and negative impacts on poorer households and individuals and on other disadvantaged groups, including women.[400] CCBS assures fulfillment of these criteria via independent third-party assessment. CFS also requires positive socio-economic benefits, including creation of employment and capacity building.[401] Assurance is achieved through independent third-party verification.

Overall, Plan Vivo is the best standard for ensuring that projects "empower producers and build their capacity, enabling them to take control of their own resources", because each project is designed to sustainably meet local needs.[402]

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396 Plan Vivo Standards, *supra* note 270 at 29.
397 CCBA Standards, *supra* note 235 at 6.
398 *Ibid.* at 25.
399 *Ibid.* at 18.
400 *Ibid.* at 34.
401 CarbonFix Standard, *supra* note 277 at 34.
402 Plan Vivo Standards, *supra* note 270 at 17.

CCBS Gold Level criteria also contain excellent requirements, although these are optional.

INTRAGENERATIONAL EQUITY[403]

This criterion assesses whether, and in what manner, each standard's certified projects contribute to poverty reduction and reduce gaps between the rich and the poor. The VCS does not consider this criterion. In contrast, the most significant commitment to this criterion is demonstrated by Plan Vivo, which states poverty reduction is one of its charitable aims; the Plan Vivo Foundation also has responsibility to "lobby for pro-poor, participatory approaches to forest management and land-use, where communities are involved in every stage of project design and delivery".[404] CCBS and CFS also incorporate this criterion by including positive socio-economic benefits requirements. CFS even includes requirements regarding the content of employment contracts.[405] All three standards that consider this criterion employ third-party assurances. In addition, CCBS Gold Level's provisions require establishing "that no member of a poorer or more vulnerable group will experience a net negative impact on their well-being or rights".[406] However, as mentioned above, CCBS Gold Level criteria are optional.

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[403] Gibson, *supra* note 123 at 235.
[404] Plan Vivo, *supra* note 261.
[405] CarbonFix Standard, *supra* note 277 at 11.
[406] CCBA Standards, *supra* note 235 at 34.

Overall, Plan Vivo is considered the best performer in terms of this criterion, as it employs the most proactive and inclusive approach.

INTERGENERATIONAL EQUITY[407]

This criterion assesses whether certified projects present options and actions that are likely to preserve or enhance the opportunities and capabilities of future generations to live sustainably. None of the standards reviewed explicitly refers to this sustainability criterion. However, CCBS, CFS and Plan Vivo require positive environmental benefits from projects, which contribute to the ability of future generations to live sustainably, and all employ third-party mechanisms to assure fulfillment. CFS requires the inclusion of conservation areas that are managed to re-establish the natural ecosystem of the project's landscape,[408] which will contribute to its ability to return to its natural capacities. CCBS also promotes restoration and protection of natural ecosystems,[409] as well as requiring that projects describe "the measures that will be taken to maintain and enhance the climate, community and biodiversity benefits beyond the project lifetime".[410] As well, CCBS acknowledges that good projects can contribute to biodiversity conservation; restoration and protection of ecosystems; saving threatened species from extinction; and

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[407] Gibson, *supra* note 123 at 235.
[408] CarbonFix Standard, *supra* note 277 at 9.
[409] CCBA Standards, *supra* note 235 at 6.
[410] *Ibid.* at 16.

maintaining productive and resilient natural life support for humans.[411] Meanwhile, Plan Vivo specifically certifies restoration and conservation projects.[412] Overall, CCBS' commitment to future sustainability is the most significant and all-encompassing.

RESOURCE MAINTENANCE AND EFFICIENCY[413]

This criterion assesses whether certified forest carbon projects contribute to the provision of a larger base for sustainable livelihoods, while reducing threats to long-term integrity of socio-ecological systems. The VCS does not consider this criterion. The other standards do not specifically mention this criterion. However, all three include third-party assured provisions that contribute to fulfillment of this criterion. For instance, CCBS promotes the restoration and protection of natural ecosystems[414] and requires that project design include "measures to ensure the maintenance or enhancement of high conservation value attributes"[415] CFS only certifies projects that convert unforested lands to forests, making it an excellent standard in terms of this criterion. Plan Vivo's certification of restoration and conservation projects also demonstrates good performance with respect to resource

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411 *Ibid.* at 6.
412 Plan Vivo Standards, *supra* note 270 at 16.
413 Gibson *supra* note 123 at 235.
414 CCBA Standards, *supra* note 235 at 6.
415 *Ibid.* at 16.

maintenance and efficiency.[416] These standards are considered to have roughly equal performance when assessing response to this criterion.

PRECAUTION AND ADAPTATION[417]

This criterion assesses each standard's consideration of, and requirements for preparation in relation to, the risk of serious or irreversible damage to the foundations of sustainability. This criterion considers precaution and adaptation, as well as mechanisms for effective monitoring and response. This criterion is closely related to the "permanence" criterion discussed above. All of the standards explored in this project actively incorporate precaution and adaptation and all establish mechanisms for effective monitoring and response. As well, VCS, Plan Vivo and CFS require the use of buffer accounts to guard against risk. CCBS, as it does not certify offsets, requires demonstration of project design measures that are consistent with the precautionary principle for the maintenance and enhancement of high conservation value attributes.[418] All of the standards employ independent third-party assurance that certified projects meet the articulated commitments associated with this criterion. For the reasons considered in the "permanence" discussion above, CFS and Plan Vivo can be considered as having satisfied this criterion most fully.

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[416] Plan Vivo Standards, *supra* note 270 at 16.
[417] Gibson *supra* note 123 at 236.
[418] CCBA Standards, *supra* note 235 at 16.

IMMEDIATE AND LONG-TERM INTEGRATION[419]

This criterion assesses each standard's requirements for incorporation of sustainability benefits in both immediate-term and long-term timeframes. The VCS does not incorporate consideration of this criterion. Likewise, the other standards do not explicitly refer to this criterion. However, each includes third-party assured provisions that are likely to contribute to its fulfillment. CCBS requires that projects plan for enhancement of the climate, community and biodiversity benefits beyond the project lifetime.[420] Meanwhile, Plan Vivo project types are naturally suited to ensuring long-term benefits, as they include restoration and conservation projects and long-term sale agreements.[421] As well, CFS requires that every project has a minimum 30-year lifetime.[422] On balance, CCBS has met this criterion most satisfactorily, as it is the only standard that looks beyond the lifetime of the project.

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[419] Gibson, *supra* note 123 at 236.
[420] CCBA Standards, *supra* note 235 at 16.
[421] Plan Vivo, *supra* note 261.
[422] CarbonFix Standard, *supra* note 277 at 2.

Table 8: SUSTAINABILITY CRITERIA SUMMARY

Criterion	Commitment	No Commitment	Strong Performance	Weak Performance
E & S ecosystem integrity	ALL		CCBS, Plan Vivo & CFS	VCS
Livelihood sufficiency & opportunity	CCBS, Plan Vivo & CFS	VCS	Plan Vivo	
Intragenerational equity	CCBS, Plan Vivo & CFS	VCS	Plan Vivo	
Intergenerational equity	CCBS, Plan Vivo & CFS	VCS	CCBS	
Resource maintenance & efficiency	CCBS, Plan Vivo & CFS	VCS		
Precaution & adaptation	ALL		Plan Vivo & CFS	CCBS
Immediate & long-term integration	CCBS, Plan Vivo & CFS	VCS	CCBS	

VCS fails to fulfill many of the criteria in the sustainability category. Each of the other three standards fulfills, at least to some extent, all of the criteria in this category. However, each displays different strengths. Overall, Plan Vivo's approach to the social aspects of sustainability can be considered to reflect better performance. This is achieved through its highly participatory grassroots approach to ensuring the viability of very small, community-controlled projects. Meanwhile, CCBS takes the better approach to ensuring that long-term benefits [to what?]result

from forest projects. Finally, CFS' strengths show in those aspects of sustainability that can be considered to be the most closely related to the technical credibility criteria.

Table 9: SUSTAINABILITY PERFORMANCE SUMMARY TABLE

Criterion	Strong Performance	Weak Performance
Legal Commitments		
• Tenure	CCBS	VCS
• Compliance	CCBS	
• Conflict	CCBS	Plan Vivo
• Sanctions	CCBS	
Technical Requirements		
• Baselines	VCS	CCBS
• Additionality	VCS & CFS	CCBS
• Monitoring	CFS	
• Permanence	CFS	
• Leakage	CFS	
• Transparency	ALL	
Sustainability		
• E & S ecosystem integrity	CCBS, CFS & Plan Vivo	VCS
• Livelihood S & O	Plan Vivo	
• Intragenerational equity	Plan Vivo	
• Intergenerational equity	CCBS	
• Resource M & E		
• Precaution & adaptation	Plan Vivo & CFS	CCBS
• I & LT integration	CCBS	

SUSTAINABILITY SUMMARY

Social and environmental sustainability are arguably equally essential in sustainable long term climate change responses, as are carbon reductions. [423] Therefore,

[423] Sustainability can be conceptualized a representing the minimum planetary condition required to maintain life in the present and in the future. See for example, Bruntland, *supra* note 121.

voluntary forest carbon standards that fail to consider sustainability adequately would seem to have credibility problems that are as serious as those that fail to consider the technical requirements for credible carbon accounting. The VCS, for example, is a "stand-alone" standard, which explicitly opts out of the provision of social and environmental benefits beyond what is required for technical credibility. This approach implies that sustainability considerations are indeed optional in addressing climate change; further, it clearly prioritizes market-oriented conceptions of carbon accounting credibility over sustainability. In contrast, CCBS is a project design standard that promotes itself as a "rigorous independent endorsement of community and biodiversity benefits", making clear its purpose as a provider of social and environmental benefits.[424] However, unlike the VCS stratagem of simply "opting out", CCBS purposely refuses to certify projects for offset generation, thereby requiring additional certification if marketable offset generation is desired. In terms of overall sustainability of approach, CCBS takes the proverbial high road. CFS and Plan Vivo, on the other hand, are multiple benefit standards; they try to serve both sustainability and credibility ends. However, by observing the commitments each has made to the criteria in the preceding analysis, we begin to see that each has made compromises in one area or the other. CFS has most often compromised in favour of technical credibility, while Plan Vivo has done the opposite showing a prioritization of project sustainability.

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[424] CCBS Rules, *supra* note 336 at 3.

Of the standards surveyed, only CFS meets all of the criteria in all three categories for both credibility and sustainability; however, despite this, each standard has shortcomings. The VCS, while technically rigorous in terms of the criteria for credible carbon accounting,[425] falls short on many of the sustainability criteria, making the VCS prone to criticism in these areas. However, where the sustainability and credibility criteria overlap, VCS requirements outperform some of those contained in the standards that are committed to social and environmental benefits. In contrast to the VCS, CCBS, which does not issue offsets, demonstrates a very strong commitment to social and environmental sustainability, and the weakest performance in terms of credibility.

Taken together, CCBS and the VCS would do an excellent job of meeting both technical credibility requirements and sustainability criteria. However, as neither requires the inclusion of the other, both fall short. The VCS explicitly allows pairing with a second standard for delivery of social and environmental benefits, but in no way requires this. Meanwhile, CCBS does encourage combining CCB Standards with a carbon accounting standard but does not require such action, nor does it specifically endorse any carbon accounting standard.[426] CCBS does, however, suggest that proponents choose a standard that is recognized and "include a formal process for the issuance, registry and tracking of emissions reductions

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[425] Lopes, *supra* note 212.

[426] CCBS Rules, *supra* note 336 at 15-16.

certificates".[427] The purported rationale for this refusal to endorse particular standards is to allow proponents to determine the most appropriate standard for their purposes. However, this leaves open the possibility that the eventual result may be combination with an inferior carbon standard.

Meanwhile, Plan Vivo and CFS are both multiple benefit standards working to incorporate sustainability requirements in tandem with technical credibility. In instances in which sustainability and credibility clash, Plan Vivo has opted to make compromises that favour sustainability and project viability. For instance, in order to ensure community benefits, Plan Vivo takes credibility risks, such as the issuance of both *ex post* and *ex ante* credits in order to ensure that projects become operational. Plan Vivo has thus been criticized for its inability to ensure that *ex ante* credits will realize actual emissions reductions.[428] CFS has chosen the opposite approach, resolving most discord in favour of credibility. However, despite the seeming emergence of a trend towards exceptional performance with respect to either the sustainability criteria or the credibility criteria, CFS performs well in light of both the credibility and sustainability criteria, showing, as others have observed, that it is possible to resolve the sustainability-credibility tension and serve both ends with one standard fairly effectively.[429]

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[427] *Ibid.* at 15.

[428] Kollmuss 2008, *supra* note 54 at 82.

[429] CarbonPositive. "CarbonFix Standard" Carbon News and Info. (10 August 2009.) online: (2009) CarbonPositive <http://www.carbonpositive.net/viewarticle.aspx?articleID=1371>.

PART IV: CONCLUSION

In this chapter, I have analyzed the four voluntary forest carbon standard case studies set out in Chapter 3 according to the governance and sustainability frameworks set out in Chapter 2. This analysis shows similarities and differences amongst the case studies along a variety of parameters. Trends that emerged in this chapter were a general support for Treib *et al*.'s hypothesis that more formal governance arrangements lead to harder law instruments on the regulatory dimension, as evident in the placement of VCS and CFS. Meanwhile, consensus-oriented standards led to softer, more flexible regulatory instruments as evidenced by CCBS' location. As well, the governance framework showed support for the nesting argument made by Tollefson *et al*., in that the institutions do seem to influence the political and regulatory dimensions to a much greater extent than the inverse.

As well, the analysis reveals strengths and shortcomings of each voluntary forest carbon standard in terms of the sustainability and credibility criteria assessed. The emergence of a pattern that may suggest a tension between credibility of offsets and sustainability emerged. Interestingly, the standard that displayed the lowest commitment to sustainability (VCS) was the one that ranked the highest in terms of formality, private interest domination and hard law characteristics in the

governance framework. One possible explanation for this is the industry-heavy domination of the VCS governance regime. However, in terms of the technical aspects of credible carbon accounting, this same standard was very robust, likely due to its articulated goals of market recognition in both voluntary and compliance markets, influencing other programs, climate change regulation and technology stimulation. The standards that displayed the greatest sustainability commitments (CCBS and Plan Vivo) were the most informal, representative of the public interest and soft-law oriented. CCBS is distinct in its participatory institutions and membership-based decision-making processes, as well as in its decentralized approaches to conflict management. Meanwhile, Plan Vivo's uniqueness lies in its willingness to compromise technical aspects to the extent necessary to ensure a grassroots approach to forest projects that accommodates the needs and capacities of very small community-based projects. CFS alone seemed to straddle the divide, operating in a relatively formal, rule-based, hard-law governance arrangement, but still making very substantial sustainability commitments.

Interestingly, the three standards that make significant sustainability commitments seem to display, perhaps to a greater extent than the VCS, many hallmarks of new governance. While it may be tempting to conclude that the features of new governance arrangements are well suited to serving the ends of sustainability, such a response may be overly simplistic. Despite the emergence of the foregoing, it seems plausible that the governance factor that is the most influential for the development of these standards is the composition and institutional "mandate

setting" of the standards' founders, who were responsible for framing each governance arrangements' original mandates, purposes and structures. As each is operated as a not-for profit or charitable organization, all subsequent development and activities are necessarily constrained to some extent by the ambitions and actors prevalent at the outset. This implies that it may be more important to consider who is involved in the voluntary forest carbon standards' governance regimes than how those regimes are structured when attempting to determine the motivations behind the existence and content of sustainability commitments contained in the standards themselves. As such, the political dimension becomes a particular location of interest.

In the next chapter, I will review the analytical results with the goal of considering the relationship between the governance of, and sustainability commitments articulated within, voluntary forest carbon standards. The discussion will be used to consider whether the particular characteristics and features of each governance arrangement can be linked to particular types of performance with respect to the sustainability and credibility criteria. As well, I will return to the discussion of the seven criticisms of the voluntary carbon market, as set out in Chapter 1, and will consider their applicability to the standards surveyed in this analysis.

CHAPTER 5: CONCLUDING COMMENTS

PART I: INTRODUCTION

In this chapter, I discuss the results of the two stages of analysis that were carried out in Chapter 4 and then reflect back on the critiques of the voluntary carbon market as described in Chapter 1. Part II contains a discussion of the trends and patterns that have emerged from the governance framework, as well as those from the sustainability and technical analysis and considers the relationship between the two sets of findings. In Part III, I consider the results of the analysis in light of the commentary on the voluntary carbon market discussed in Chapter 1. In Part IV, I summarize the project as a whole.

PART II: ANALYTIC TRENDS

Analytical tools applied in the previous chapter have uncovered some interesting results. For instance, particularly as all of the standards are operated by not-for profit (or non-profit) organizations, their locations on the institutional diagram varied widely. The results from application of the governance framework also reflect a difference in location of the VCS in comparison with the other three standards on the vertical axis across all three governance dimensions.

The location of the VCS on the governance diagrams reflects the rule-based, technically robust and industry-oriented focus of the standard which, in turn, reflects the VCS' preoccupation with credibility and saleability of offsets generated

by certified projects. However, despite this strict rule-based orientation, the VCS is also representative of numerous hallmarks of new governance. For example, the VCS favours and rewards innovation, with a steering committee dedicated to compensating methodology innovators. This approach to methodologies innovation also reflects the VCS' substantial commitment to flexibility. The VCS displays multi-level interaction in its delegated processes for validation and verification, as well as in its processes for expansion, revision and maintenance of standards. In the sustainability assessment, the VCS performed exceptionally well in terms of the criteria in the technical requirements category, but was notably absent with respect to almost all of the criteria in the sustainability category.

With regards to specific criteria in the sustainability assessment, the VCS excelled in terms of baselines and additionality. As well, the VCS performed strongly with respect to permanence and leakage. This very strong performance with respect to criteria in the technical requirements category is reflected by the VCS' formality and hard law orientation as demonstrated by its position in the upper right quadrant on the institutional and regulatory diagrams. However, despite these strengths, the VCS failed to incorporate important facets of several criteria in the sustainability assessment. For instance, the VCS was alone in not requiring proof of uncontested title with respect to the ownership/tenure criterion. As well, the VCS internalizes sanctions and dispute resolution, rather than employing more transparent third party practices. This internalization trend may indicate a lack of transparency and accountability, both of which are considered to be essential principles of good

governance. These tendencies reflect the VCS orientation towards the prioritization of private interests, as reflected by its vertical location on the political diagram. Also, relating to its prioritization of private interests, as shown on the political diagram, is the VCS' failure to incorporate almost all of the criteria in the sustainability category, including: livelihood sufficiency and opportunity; intragenerational equity; intergenerational equity; resource maintenance and efficiency; and immediate and long-term integration.

Interestingly, although it sits lower than the VCS on each of the vertical axes, CFS can also be found in the upper right quadrant of each of the governance diagrams. This is perhaps reflective of its genesis under the UNFCCC umbrella and its adoption of IPCC-based technical criteria. However, despite displaying some formal and hard-law oriented tendencies, CFS exhibits simplicity and sustainability commitments that are laudable. CFS also demonstrates a range of new governance attributes including participation, deliberation and revisability. The one significant downfall of CFS, if indeed it can be considered such, is that there is one methodology that is applied to all projects, which limits flexibility, making project-specific adaptations impossible.

CFS excels with respect to many of the criteria in the sustainability assessment. In particular, CFS performed very well in terms of the permanence and leakage criteria in the technical requirements category. This technical rigour relates to the governance framework diagrams through CFS' position in the upper right quadrant of the regulatory diagram, reflecting a position nearer the hard law end of the

continuum. As well, CFS excelled in terms of several criteria in the sustainability category, including environmental and social ecosystem integrity, resource maintenance and efficiency and precaution and adaptation. Interestingly, these are the sustainability criteria that most closely relate to the criteria contained in the technical requirements category. CFS' superb performance on the more technical criteria in the sustainability category is illustrated by its location near, but just above, the midline with respect to each of the three vertical axes of the governance dimensions' diagrams. This positioning reflects CFS' technical orientation when confronted with the need to resolve the tension that arises between serving the ends of sustainability and those of technical credibility.

Meanwhile, Plan Vivo occupies the bottom left quadrant in all of the diagrams, reflecting a more informal, and public-interest oriented governance arrangement, with softer regulatory measures. However, Plan Vivo is also interesting in its monocentricity relative to the other governance arrangements explored. Despite this monocentricity, Plan Vivo reflects several "new governance" attributes, including power sharing, participation and multi-level interaction as demonstrated through participatory, bottom-up planning and community-led design. The sustainability commitments of Plan Vivo are also substantial, rivalling those of CFS and CCBS. However, Plan Vivo displays a less structured commitment to offset credibility.

Plan Vivo's performance on the sustainability assessment is the strongest with respect to criteria contained in the sustainability category. In particular, Plan Vivo is

the strongest standard in terms of commitments to livelihood sufficiency and opportunity and intragenerational equity. These social and community oriented sustainability goals are well-served through Plan Vivo's flexible, project-specific approach to certification, monitoring and definition of assessment criteria. Plan Vivo's eschewal of bureaucracy has resulted in the Plan Vivo Foundation's retention of oversight for many aspects of the program, such as project validation, as is reflected in the relatively more monocentric location of Plan Vivo on the horizontal axis of the governance dimension diagrams. This allocation of authority allows the Foundation to ensure flexibility, community design and participatory planning goals are possible for each certified project. Although perhaps counterintuitive, this monocentricity may be the governance attribute that allows for such a level of project-specific adaptation to ensure community benefits, while maintaining a coherent and credible standard. Such credible adaptation may be a more difficult goal to achieve through delegation to independent third party validators as greater delegation to multiple third parties may result in disparate outcomes that undermine the credibility of the standard. Likewise a failure to delegate sufficient authority would result in a lack of flexibility due to the presence of third party decision-makers who do not possess the requisite authority to make project-specific exceptions and adaptations.

CCBS also displays more informal institutional characteristics and softer regulatory outcomes. The position of CCBS on the horizontal axis shifts slightly across the dimensions, reflecting the fact that certain of the CCBS partnership members,

namely the funding partners, do not possess power or influence within the CCBS governance arrangement. In terms of new governance characteristics, CCBS embodies several, including participation and power-sharing, flexibility and deliberation. CCBS also displays the highest commitment to present and future sustainability of all the standards surveyed. This may, in part, reflect the fact that CCBS does not certify offset generating projects and therefore does not need to consider, much less resolve, the sustainability-credibility tension that seems to be present for CFS and Plan Vivo.

In terms of specific sustainability assessment criteria, CCBS excelled, in particular, with respect to criteria in the legal requirements category. CCBS' incorporation of the broadest and most inclusive requirements in terms of the ownership/tenure criterion is reflected on the political diagram where it occupies the location closest to the public interest end of the spectrum. CCBS also articulates requirements for inclusion of traditional and community authority is also present for the legal compliance criterion. The CCBS' deliberate inclusion of requirements relating to traditional, customary and community rights and authorities conveys the intense public-interest orientation of this standard. CCBS also performed very well in terms of the most forward looking criteria in the sustainability category, namely intergenerational equity and immediate and long-term integration, which may relate to CCBS' informality in the institutional dimension and public-interest domination in the political dimension.

The sustainability assessment shows that the case studies selected are quite similar in terms of many of their parameters. However, despite these similarities, there are some very important differences. For example, with respect to the technical requirements category the VCS adopts a very rigorous approach. Meanwhile, with respect to the legal commitments and sustainability criteria categories the VCS falls short. For example, there is a considerable void with respect to the presence of articulated commitments in the areas of environmental and social sustainability. The VCS acknowledges this gap but, rather than addressing it with additional certification criteria, it has chosen to permit dual certification with schemes such as CCBS. This approach downplays the importance of sustainability considerations, painting them as "optional" rather than essential criteria in forest carbon projects. As well, the VCS does not contain any requirements that bring benefits to local communities in which projects are located. This means that of the standards surveyed the VCS alone might conceivably certify the types of carbon projects that have been referred to in carbon colonialism arguments.

Comparatively, CCBS takes a very different and much more flexible approach that prioritizes social and environmental sustainability over technical credibility. CCBS does not certify offset-generating projects, instead the standards make certain that forest carbon projects are designed to ensure positive social and environmental outcomes. Like the VCS, CCBS allows dual certification with other schemes, which allows CCBS certified projects to gain offset-generating certification as well.

The approach taken by CFS generates credible offsets through explicit incorporation of social and environmental sustainability principles. However, in avoidance of credibility trade-offs, the CFS has adopted a stricter approach to methodology in which project-specific flexibility needs may suffer. Contrasting to CFS' approach, Plan Vivo has made an opposite choice, allowing for certification of riskier offsets that may not deliver carbon reduction over the long term, thus perhaps compromising credibility in order to ensure that projects that provide social and environmental benefits can get off the ground.

As the above discussion illuminates, there seems to be a tension between the service of credible offsets and sustainable outcomes. However, there may be multiple governance styles capable of resolving this tension acceptably. Despite some obvious strengths and weaknesses within each of the voluntary forest carbon standards explored, their particular locations on the governance dimensions diagrams do not seem to dictate the overall sustainability content of the standards.

The element of governance that seems to be the most important indicator of an commitment to sustainability is the political dimension and, in particular, the prevalence of public interest actors. The governance arrangements of each of the standards that make a commitment to sustainability are populated by public interest actors to a much greater extent. Meanwhile, VCS is the only standard that is dominated by private interest (industry) actors and is also the only standard that does not articulate substantial commitments to sustainability. Therefore, it seems

likely that the essential governance factor in the articulation of sustainability commitments is "who" is involved rather than "how" governance proceeds.

However, the governance dimensions do seem to be linked to performance in terms of specific criteria as well as the ways in which the sustainability-credibility tension is resolved. Each of the four standards surveyed has taken a different approach to resolving this tension, with varying success. Arguably, CFS and Plan Vivo are the only two of the four standards that make a real attempt to resolve the tension and provide credible offsets with substantial sustainability commitments, with CFS emerging as the likely leader. However, these two standards do not occupy the same quadrant on any of the diagrams. Despite the trade-offs mentioned earlier, this lack of congruence in the governance dimension thus demonstrates that, perhaps, multiple approaches to governance are perhaps capable of resulting in similarly acceptable sustainability outcomes. More predictably, the VCS and CCBS, which have focussed on opposite sides of the sustainability-credibility duality, do not share a quadrant on any of the diagrams. As mentioned above, who is involved in a particular governance arrangement may be the better predictor in terms of sustainability commitments.

PART III: VOLUNTARY CARBON MARKET COMMENTARY REVISITED

In the concluding section of Chapter 1, several criticisms regarding the voluntary carbon market were described. These criticisms will now be revisited in the context

of the four voluntary forest carbon standard case studies set out in Chapter 2 and in the results of the analysis carried out in Chapter 4.

The first criticism described was that the voluntary market is characterized by a lack of regulation and there is no "consensus on the technical components or a general definition of a carbon offset."[430] The analysis in Chapter 4 shows that there is at least some merit in this criticism. However, the situation, as least with respect to the case studies used in this analysis, is not as dire as the criticism implies. While, there is no regulation *per se* within the voluntary carbon market, each voluntary forest carbon standard employs fairly similar technical components, suggesting that there is at least some degree of consensus on what is required to generate a credible carbon offset. However, Plan Vivo also showed a real weakness in its certification of both *ex post* and *ex ante* credits. As well, each standard that certifies carbon offsets shares similar requirements for independent third-party validation and verification, as well as registration and retirement requirements with respect to certified carbon offsets. A common downfall in this area is the acceptance of simultaneous validation and verification by the auditing same body. As well, repeat verifications by the same verifier are also commonly permitted by most standards.

A related second criticism is that the lack of oversight leaves consumers "in the dark" with respect to offset credibility and the criteria by which each standard certifies offsets. This criticism is not well addressed by any of the standards

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[430] Bumpus, *supra* note 39 at 131.

selected in this study. However, all of the standards have excellent reporting, monitoring and transparency mechanisms through which conscientious consumers can gain access to information. Despite the existence of these mechanisms, most consumers do not possess the requisite knowledge to easily make sense of the pros and cons of each standard. However, this problem could perhaps be addressed via a collaborative grading scheme made available at point of sale to consumers.

The third criticism, namely that the voluntary carbon market lacks uniform rules, clear standards, transparency and registration requirements,[431] is partially addressed by the transparency comments in relation to the first and second criticisms. However, with respect to the lack of uniformity amongst standards, this critique actually represents one of the most important strengths of the voluntary carbon market. The lack of uniformity permits maximum flexibility, such as the flexibility to certify very small grassroots projects that offer high conservation and community benefits, thus allowing for Plan Vivo's motivation of hundreds of rural participants to engage in more sustainable land-use practices.[432] As well, the lack of uniformity stimulates innovation, such as in the case of the VCS compensation mechanism for methodological innovation. While each standard prioritizes different values, each is making valuable gains that could not be achieved if all standards subjected their projects to the uniform rules. However, despite the need for flexibility and innovation, all of the standards that certify offsets also use

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[431] Kollmuss 2008, *supra* note 54 at 4.

[432] Kollmuss 2010, *supra* note 56 at 185.

registries. This means that carbon offsets are carefully tracked, there is no double counting, and each offset is only sold once.

The fourth criticism, that offsets are often generated in developing countries and offer no benefits to local communities, might be true for the VCS but for not any of the other standards considered. Each of the other standards (CCBS, Plan Vivo and CFS) specifically requires that benefits accrue to local communities. So, while some voluntary carbon standards might be engaging in "carbon colonialism",[433] this is not a universally true criticism of the VCM. The related concern that forest carbon projects often include large-scale monoculture forests plantations, which threaten the livelihoods of impoverished local populations whose survival depends on the use of that same land,[434] is likewise untrue for the standards explored. Each of CCBS, Plan Vivo and CarbonFix require the use of native or naturalized species. As well, all of the standards examined, including the VCS,[435] render ineligible projects that engage in conversion of natural ecosystems for the purpose of generating offsets. Related criticisms were that projects could receive approval at government, but not community, levels and that often funds generated are deposited into government, not community, hands. As described above, except for the VCS, all of the standards examined require extensive community involvement and the accrual of significant community benefits from all certified projects. Additionally, the VCS at

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[433] Bachram, *supra* note 51 at 6.
[434] *Ibid.* at 7.
[435] See for example, VCS AFOLU, *supra* note 215 at 5.

least acknowledges this concern by requiring that project proponents identify and mitigate negative socio-economic impacts prior to certification.[436]

Fifth, environmental impacts, such as biodiversity losses associated with offset projects, are often not adequately considered. As discussed previously, all of the standards require identification and mitigation of negative environmental impacts. As well, all of the standards surveyed prohibit the conversion of natural ecosystems for carbon projects. In addition, CFS, CCBS and Plan Vivo all require that substantial positive environmental benefits result from all certified projects. The VCS does not require environmental benefits.

The sixth criticism was that higher "quality" standards generate more expensive carbon offsets. However, the price of carbon credits on the voluntary market varies dramatically. These fluctuations in price have been linked to a number of factors, including supply and demand, political factors, technology costs and others. Therefore, some argue that "since the attribute of credit quality are only one of the factors influencing price, 'better' credits and higher prices do not always correlate."[437] Despite these arguments, VCS, which has the largest volume of transactions for 2010, had one of the lowest price averages. Meanwhile, Plan Vivo and CFS had some of the highest prices but a much smaller market share.[438]

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[436] *Ibid*.

[437] Exergia, *supra* note 87 at 44.

[438] David Diaz, Katherine Hamilton and Evan Johnson. "State of the Forest Carbon Markets 2011: From Canopy to Currency", online: 2010 Forest Trends at vi. <http://www.forest-trends.org/documents/files/doc_2963.pdf>

Interestingly, the layering of VCS and CCBS represents more than 50% of the market share for 2010.[439] This combination of trends indicates a clear preference on the part of consumers for certification that ensures social and environmental benefits.

According to the seventh criticism, the voluntary carbon market provides "moral cover" for the "destructive consumption ethic, which literally drives the fossil fuel economy".[440] Another aspect of this criticism is that this type of market implies a right to pollute akin to a property right. No aspect of the preceding analysis addresses this class of criticisms squarely or adequately. Despite this, many standards incorporate sustainability requirements that prevent the prioritization of carbon removal at the expense of other values.

Overall, the VCM cannot, on its own, be viewed as a substantial solution to climate change, nor is it intended as such. It can, however, be considered a useful testing ground for innovation and flexibility in shaping future mitigation actions. It also provides mitigation opportunities for many consumers, corporate and otherwise, in jurisdictions where no regulated markets exist. It can also be viewed as a viable alternative income stream for countless communities in developing countries where deforestation has been a necessary precursor to many economic activities.

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[439] *Ibid.*

[440] Bachram, *supra* note 51 at 7.

PART IV: CONCLUSION

In this final chapter, I explored the results of the analysis of the selected case studies that were reviewed in the preceding chapter. While not an exhaustive survey by any means, this exploration demonstrates that many of the criticisms of the voluntary carbon market are not universally true. Within the different standards, there are often trade-offs that occur. This makes some standards better than others for achievement of certain values and goals. The VCS, for example, which most closely mirrors government-style hierarchy and regulatory schemes, is a technically robust carbon standard, with a focus on industry-oriented private interest values and credibility of certified offsets. Meanwhile, the three other standards explored, CCBS, CFS and Plan Vivo, do a much better job of serving public interest-oriented social and environmental sustainability goals, with CFS aiming for the best of both worlds.[441]

Considering all stages of the analysis together revealed some interesting and unpredictable results. For instance, the range of locations occupied by the standards across the horizontal axis (of all dimensions) did not seem to correlate with the commonly espoused,[442] and recently-tested[443] governance theory that governance arrangements that display the broadest range of participants

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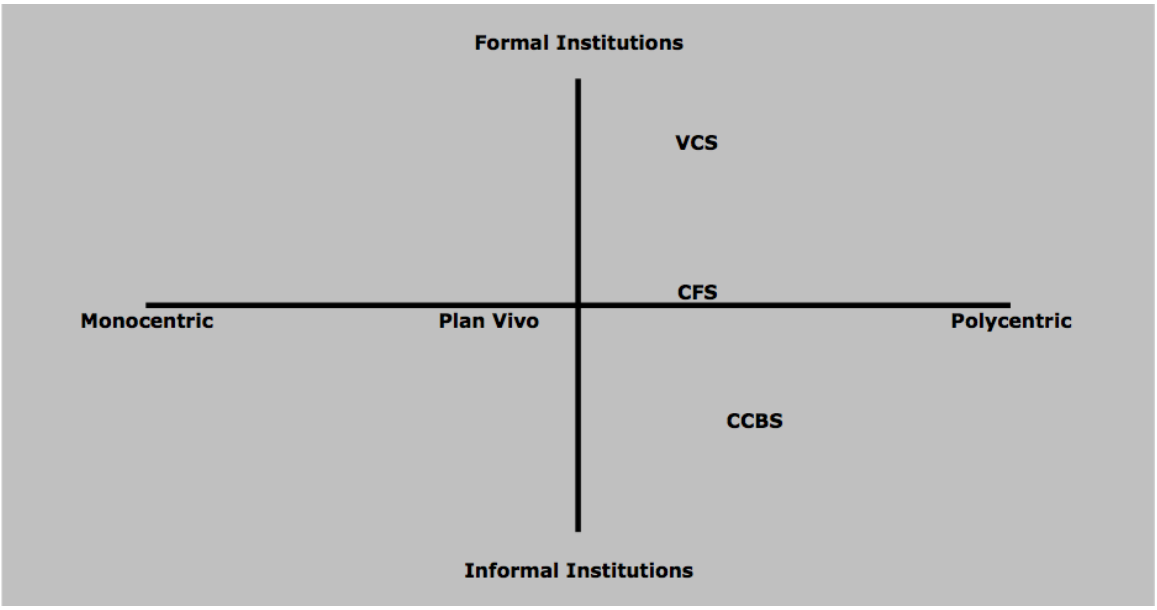
[441] CarbonPositive, *supra* note 429.
[442] See, for example, Rhodes, *supra* note 116.
[443] See, for example Tollefson, *supra* note 110 at 15.

(polycentric governance) will be the least formal and display the softest regulatory characteristics. In fact, standards that included a broader range of actors did not correlate with a lessening of formality or softening of regulation as may have been anticipated. Rather, there appeared to be no discernable trend on the horizontal axis in relation to any of the governance or sustainability characteristics, thus lending support to Howlett *et al.*'s contention that the realities of modern governance are "more complex" than this hypothesis anticipates.[444] This replicates a similar finding in the recent governance research of Tollefson *et al.*[445]

Figure 7: INSTITUTIONAL DIAGRAM



On the institutional diagram, the two standards that occupy the upper right quadrant are the VCS and CFS. These two standards perform very well in terms of all of the technical requirements criteria. The CFS also performs well with respect

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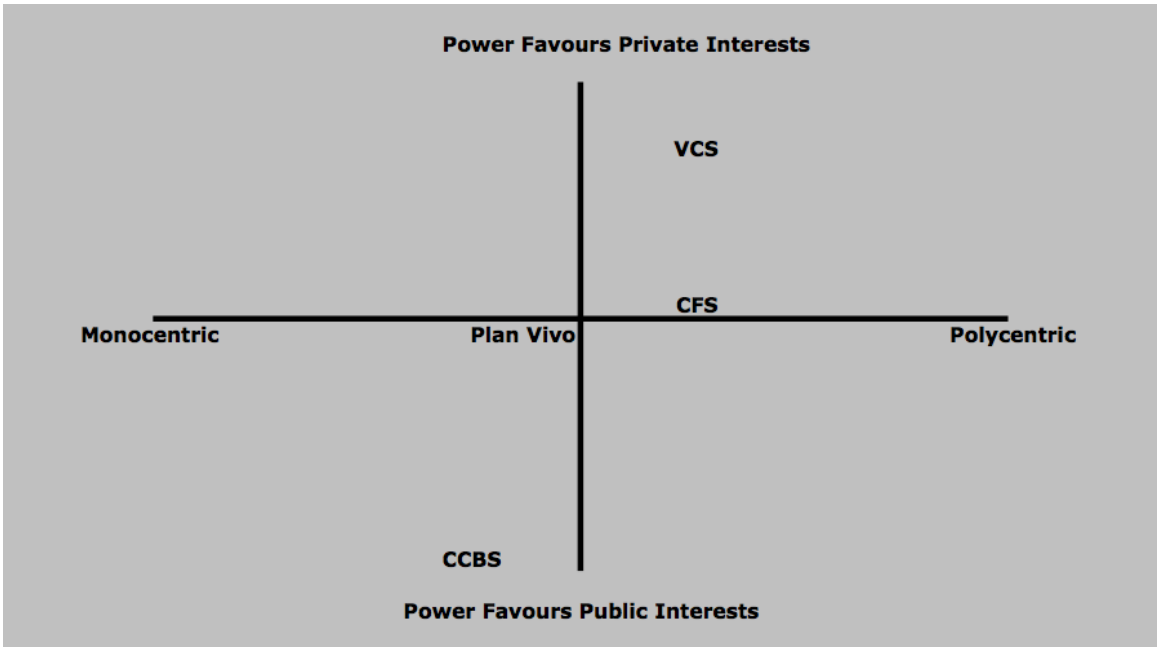
[444] *Ibid.*; Howlett, *supra* note 132 at 4.

[445] Tollefson, *supra* note 110 at 15; Doelle, *supra* note 111 at 16.

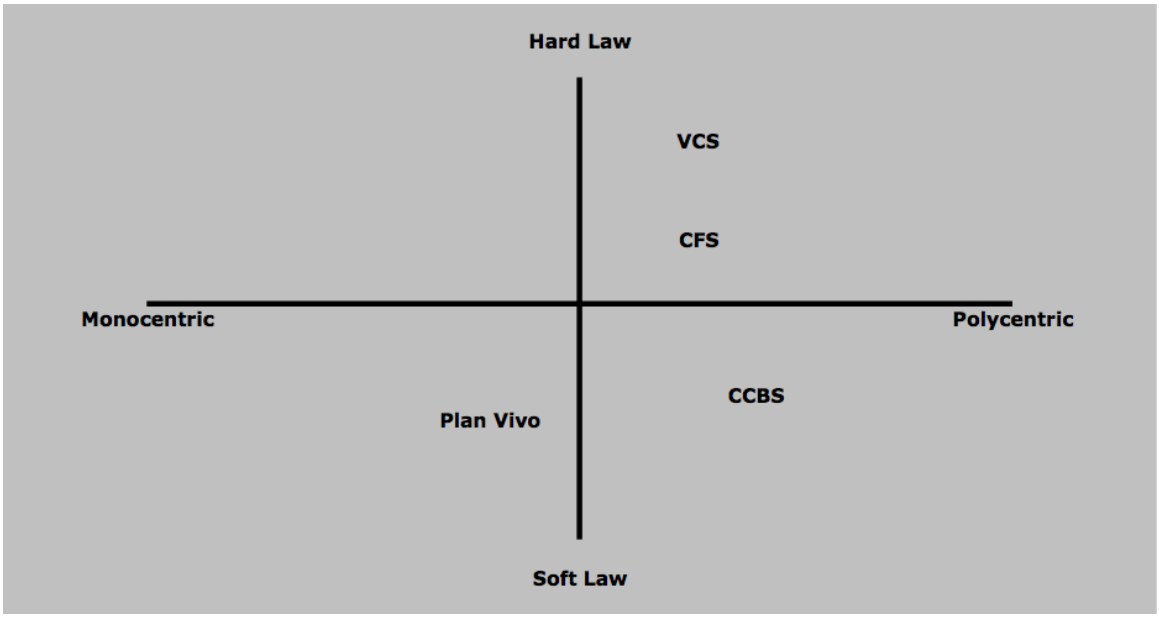
to the legal commitments category and the sustainability category but is rarely the best performer when looking at individual criteria, except where those criteria are closely related to the technical requirements criteria. In contrast, the VCS does not perform particularly well with respect to the legal commitments criteria and is the weakest in meeting the sustainability criteria. Meanwhile, CCBS, which occupies the lower right quadrant on the institutional diagram is the weakest performer in the technical requirements category, the strongest performer in terms of all of the legal commitments criteria and is also the strongest in fulfilling several of the sustainability criteria. Plan Vivo, which occupies the lower left quadrant of the institutional diagram does not articulate commitments to some of the criteria in the legal commitments category and shows a willingness to compromise technical requirements for other values. However, Plan Vivo performs extremely well in the sustainability category and is the strongest standard with respect to many of the sustainability criteria.

Figure 8: POLITICAL DIAGRAM



The political diagram shows a more predictable pattern, with the technically robust VCS occupying the most private-interest oriented location on the vertical axis. The similarly robust CFS occupies the next highest location on the vertical axis in this dimension. However, a similar location to CFS is occupied by Plan Vivo, which displays some definite technical weaknesses. Finally, ENGO-dominated CCBS occupies the lowest position on this diagram. This pattern roughly translates to the strongest to weakest technical performance correlating with the most to least private interest domination. Meanwhile, the most public interest dominated governance arrangements are also those that display the strongest overall performance in the sustainability category of criteria. Interestingly, the two standards that display the greatest public interest orientation are also the most monocentric on the horizontal axis of the political diagram.

Figure 9: REGULATORY DIAGRAM



The regulatory diagram is perhaps slightly more "messy". Unpredictably, the CCBS, which frequently occupies the bottom right quadrant, outperforms the other standards in terms of each of the criteria in the "legal commitments" category. CCBS requires the broadest commitments in this category coupled with decentralized, often delegated mechanisms for assurance. Despite this seemingly rigorous approach to ensuring legal commitments, CCBS is located towards the soft-law end of the continuum in the regulatory dimension in order to reflect its use of project-specific methodologies and optional criteria. More predictably, the VCS and CFS, the two standards that performed very well overall in view of the technical credibility criteria, occupy the top right quadrant in all of the governance dimension diagrams. Meanwhile, CCBS, which is frequently the weakest performer in this category, occupies a position below the midline in each dimension. Plan Vivo, which also performed exceptionally with respect to many of the sustainability criteria and not

so well in the other two categories, also employs a more flexible regulatory scheme, with the negotiated project-specific parameters for assessment.

This pattern of distribution of the voluntary forest carbon standards across the governance dimensions implies a somewhat predictable relationship between formality, private interests, hard law and technical rigour. Similarly, the standards that exhibited exceptional sustainability performance were less formal, more flexible and employed softer regulatory mechanisms. CFS remains somewhat of an outlier, managing to simultaneously satisfy all criteria in each category. This is reflected in its position near the midline in each of the governance diagrams.

With respect to specific sustainability criteria, the VCS, which occupies the upper right quadrant, performs satisfactorily only in terms of the precaution and adaptation criterion. This is predictable, as this is the sustainability criterion that most closely relates to the criteria within the technical requirements category. Meanwhile, CCBS, which is located most consistently in the lower right quadrant of the governance diagrams, performs well with respect to all of the sustainability criteria and exceptionally concerning those criteria that are the least tangible and most forward-looking. These criteria include intragenerational equity, resource maintenance and efficiency and immediate and long term-integration. Plan Vivo, which occupies the bottom left quadrant of each of the governance diagrams, also performs well in view of all of the sustainability criteria and is clearly the best performer with respect to the sustainability criteria relating to social and community benefits, including livelihood sufficiency and opportunity, and

intragenerational equity. The social benefits emphasis is also reflected in the legal commitments category; here, Plan Vivo's approaches are very flexible and allow multiple opportunities for rectification prior to the employment of sanctions mechanisms. As mentioned previously, CFS, hovering on the midline, is alone in satisfying all of the criteria in each category.

However, despite the differences among the standards, all four of the governance arrangements examined display some of the hallmarks of "new governance". Unexpectedly, certain criteria in both the technical and sustainability categories, such as transparency, monitoring requirements, and precaution and adaptation, were met by all of the standards surveyed, regardless of their individual governance characteristics. Interestingly, these are all characteristics that fall into the category of commonly described attributes of "new governance" arrangements.

At this point, only CFS meets all of the criteria set out in the sustainability assessment in the second part of the analysis. Perhaps the efficiency and flexibility losses, the credibility trade-offs, and the economic costs associated with serving multiple value sectors are too great for many VCM standards to encompass completely. However, even though CFS satisfies all of the criteria in each category, making it the best overall standard in terms of the criteria used in this analysis, it is not the best performer in view of most of the individual criteria, reflecting the trade-offs and tensions that exist when sustainability and technical credibility are assessed together. Plan Vivo and CCBS also easily satisfy all of the sustainability criteria, exceeding the performance of CFS in many respects. These three standards

occupy different quadrants on almost all of the governance dimensions, implying that, despite the more general patterns mentioned above, there is no particular governance formula that is more closely linked to sustainability performance.

While the analysis, when taken as a whole, may reveal trends and tendencies that correlate to better performance on individual sustainability criteria it does not reveal a "best" governance blueprint for the promotion of sustainability, each of the voluntary forest carbon standards explored has various strengths and weaknesses. Perhaps this finding reflects a remediable weakness in the analysis. For instance, a comprehensive analysis of project-level implementation of sustainability commitments, which is beyond the scope of this research, may provide enlightening revelations. Or, perhaps, there truly are multiple sustainable governance formulas with each being a reflection of its own unique and context-dependent approach to trade-offs that are necessary within real-world decision-making processes.[446] It seems clear that each of the standards examined performed very well within certain prioritized parameters. This prioritization of certain aspects or parameters seems most closely linked with the political dimension of the governance framework. In particular, the nature of the actors within the governance regime seem to dictate the emphases, extent and content of articulated sustainability commitments within the standards. However, despite the absence of a "best" governance formula, there are certain attributes that are undoubtedly essential such as: transparency, monitoring,

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[446] Gibson, *supra* note 123 at 237-238.

verification, flexibility, revisability, adaptability and explicit acknowledgement of the trade-offs that are made.

FINAL THOUGHTS

An outstanding issue that remains at the end of this analytical exercise is concern for the implications of a commodified, tradable and marketable "right to pollute" that accompanies carbon offset trading generally. Carbon trading may not promote the paradigm shift that some argue is necessary to ensure sustainable models of production, consumption and development.[447] As well, the very existence of this "right" implies that the carbon removal and storage function can be adequately unbundled from the other forests functions and benefits for monetization purposes. Another aspect of this concern is the complexity and tension that surrounds ensuring that carbon rights are allocated fairly. At this point, it remains unclear whether sustainable and equitable unbundling and allocation is occurring. However, despite some lingering criticisms, carbon trading, particularly the VCM, remains an important and valuable testing ground for innovation and augmentation of mitigation mechanisms to address climate change.

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[447] Earth Peoples. *Indigenous Peoples Guide: False Solutions to Climate Change,* online: (2009) Earth Peoples <http://www.earthpeoples.org/CLIMATE_CHANGE/Indigenous_Peoples_Guide-E.pdf>.

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APPENDICES

APPENDIX I: VCS COMMITTEES

Within the structure of the original 19-member VCS Steering Committee (2006), seven technical committees were convened to provide expertise in the areas of governance, additionality, validation and verification, registries, land use change and forestry, general policy issues and performance standards.[448]

The nine-member AFOLU Steering Committee, established in 2007, is charged with developing guidance and requirements for projects in land use sectors, including agriculture and forestry.[449] AFOLU technical working groups are also convened to refine or develop AFOLU requirements. Meanwhile, the 10-member AFOLU Expert Assessment Panel (2009) is tasked with approving qualified AFOLU experts for recommendation to the VCS.

In 2011, a 22-member Advisory Committee and a four-member secretariat were created to "provide strategic input and guidance into the conceptual development of the VCS Jurisdictional and Nested REDD Initiative."[450] The initiative, funded by a grant from the Climate and Land Use Alliance[451] "is led by staff in collaboration with

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[448] VCS, *supra* note 209.

[449] *Ibid*.

[450] *Ibid*.

[451] The Climate and Land Use Alliance is a collaborative initiative of the ClimateWorks Foundation, David and Lucile Packard Foundation, Ford Foundation,

committees of global experts from scientific, academic, non-profit and market organizations to ensure new requirements meet global best practice."[452]

In 2010, the 15-member Steering Committee on Standardized Approaches for Baselines and Additionality was formed to create guidelines for standardized approaches to baselines and additionality, in order to guide methodology developers.[453] This is necessary because future methodologies proposed for use under the VCS will be required to meet the requirements for performance benchmarks and technology tests.

The final steering committee, the seven-member Compensation Mechanism Steering Committee (2009), was tasked with the design of an effective compensation strategy for new VCS methodology developers.[454] The VCS harnesses the innovation of new methodologies by project developers through a compensation mechanism.[455] This mechanism allows the VCS to share a portion of the levy on Voluntary Carbon Units (VCUs) issued by any project using the innovator's methodology. This creates an incentive for methodology developers to create new, better and more broadly applicable approaches to curbing GHG emissions.

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and the Gordon and Betty Moore Foundation. See <http://www.climateandlandusealliance.org/>.

[452] VCS, *supra* note 209.

[453] *Ibid*.

[454] VCS Program Guide, *supra* note 211 at 16.

[455] VCS, *supra* note 209.

APPENDIX II: VCS PROGRAM

The VCS program is comprised of four main elements: the standard itself; a process for assessing new methodologies; an approval process for independent auditors who are then responsible for validation and verification; and a comprehensive registry system for issuing and listing GHG credits.[456] In order for a carbon reduction project to generate VCS-approved offset credits, called Voluntary Carbon Units, it must represent emissions reductions that are: real, measurable, additional and permanent, as well as independently verified, conservatively estimated, uniquely numbered and transparently listed (**Table 10**).[457]

When submitting a carbon reduction project, proponents have the option of using a methodology that has already gained VCS approval, or approval by a VCS approved program[458] – or they can submit a new methodology for approval.[459] New methodologies seeking VCS approval are subjected to a 30-day public review and comment, followed by review by two independent validators/verifiers or auditors, one of whom is selected by the VCSA. As mentioned above, a methodology compensation mechanism for developers of new methodologies promotes innovation.

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[456] *Ibid.*

[457] VCS Program Guide, *supra* note 211.

[458] VCS-approved programs include the Climate Action Reserve and the United Nations Clean Development Mechanism (CDM).

[459] VCS Program Guide, *supra* note 211.

Table 10: VERIFIED CARBON STANDARD REQUIREMENTS

REQUIREMENTS
All offset credits produced under the VCS result from GHG emission reductions that are: real, measurable, additional and permanent, as well as independently verified, conservatively estimated, uniquely numbered and transparently listed.
REAL GHG emission reductions must be accounted for after they occur (*ex –post*), and never before (*ex ante*).
MEASURABLE Reductions must be quantifiable against a credible emissions baseline using robust and established scientific practices.
ADDITIONAL Reductions must go beyond business as usual and reduce emissions that would have occurred in the absence of the project.
PERMANENT Reductions must be permanent. Land use (AFOLU) projects, carrying a risk that stored carbon may eventually be released, are required to ensure that GHG reductions last over time by dedicating a percentage of credits to a buffer account that can be drawn down in case of losses. Buffer account percentages, ranging from 5-60%, vary by project type and risk level associated with a particular project. Credits in the buffer are cancelled when carbon is lost from the project.
INDEPENDENTLY VERIFIED All project plans and results must be rigorously validated and verified by approved, experienced, independent auditing bodies. Two separate independent verifiers also carry out risk assessment and buffer determinations.
CONSERVATIVELY ESTIMATED Reductions must be conservatively estimated to ensure environmental performance. Conservative estimate requirements extend to buffer determinations and risk assessment
UNIQUELY NUMBERED Once verified, each VCU is assigned a unique serial number.
TRANSPARENTLY LISTED Each verified and numbered VCU is listed with a VCS approved registry operator.

The VCS requires that all projects and GHG reductions be approved through audit by an approved independent auditing body. It is the auditors who verify the projects and approve the emissions reductions. In order to gain VCS approval, auditors must be certified for each sector by a VCS-recognized organization[460] or program.[461] Proponents are permitted to select their own auditor from the list of those who are

[460] Such as the American National Standards Institute.

[461] Such as the Clean Development Mechanism (See **Table 2**).

VCS-approved. Audits are conducted at the validation and verification stages. However, both validation and verification may occur simultaneously at the verification stage.

APPENDIX III: CCBS PROGRAM

CCBS accepts land-based climate change mitigation projects of any size in the following areas: primary or secondary forest conservation; reforestation or revegetation; agro-forestry plantations; densification and enrichment planting; introduction of new cultivation practices; introduction of new timber harvesting or processing practices (also referred to as "reduced impact logging"); reduced tillage on cropland; and improved livestock management.[462] The CCBS program requires projects to satisfy 14 mandatory criteria in order to gain CCBA approval (See **Table 11**).[463] In addition, there are three optional criteria, which, if satisfied can result in a Gold Level status award. Thus, there are two possible levels of validation, either approval or Gold Level.

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[462] CCBA Standards, *supra* note 235 at 38.

[463] *Ibid.* at 10-11.

Table 11: CLIMATE, COMMUNITY & BIODIVERSITY STANDARDS REQUIRMENTS

REQUIREMENTS
CCBA-approved projects must satisfy 14 required criteria. Projects that provide exceptional benefits can achieve Gold Level status by satisfying one of the three optional criteria.
Required Criteria
General
G1 Original Conditions in the Project Area
G2 Baseline Projections
G3 Project Design and Goals
G4 Management Capacity and Best Practices
G5 Legal Status and Property Rights
Climate
CL1 Net Positive Climate Impacts
CL2 Offsite Climate Impacts ("Leakage")
CL3 Climate Impact Monitoring
Community
CM1 Net Positive Community Impacts
CM2 Offsite Stakeholder Impacts
CM3 Community Impact Monitoring
Biodiversity
B1 Net Positive Biodiversity Impacts
B2 Offsite Biodiversity Impacts
B3 Biodiversity Impact Monitoring
Optional Criteria
Gold
GL1 Climate Change Adaptation Benefits
GL2 Exceptional Community Benefits
GL3 Exceptional Biodiversity Benefits

A third-party evaluator, who will use indicators to ascertain whether individual

CCBS criteria are satisfied, determines whether a project meets these criteria and

awards validation at the standard or Gold level.[464] This process includes a document review, site visit and 30-day public review period prior to auditor certification or rejection.[465] Projects must be verified through document review and site visit every five years in order to retain CCBS certification;[466] the same auditor who performed the initial validation may also perform the verification.[467]

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[464] CCBA Standards, *supra* note 235, at 16, 46, 48.

[465] *Ibid.* at 47.

[466] *Ibid.* at 8.

[467] Kollmuss 2008, *supra* note 54 at 78.

APPENDIX IV: PLAN VIVO PROGRAM

Plan Vivo project design is community-led and managed by a project coordinator, typically an NGO, which is responsible for recruiting producers, coordinating training, providing technical oversight, monitoring projects and reporting to Plan Vivo. Plan Vivo accepts projects of any size from developing countries in the areas of afforestation and reforestation, agroforestry, avoided deforestation, forest conservation and restoration.[468] Projects are required to show, through independent third-party verification, that they are generating long-term carbon, livelihood and ecosystem benefits.[469] All Plan Vivo projects provide benefits to the local community and environment through "development of sustainable land-use systems, planting of native species, and promotion of improved livelihoods through the diversification of income sources."[470] The Plan Vivo Standards criteria for quantifying a project's ecosystem and livelihood benefits are summarized in **Table 12.**[471]

Consultants are hired by Plan Vivo to perform project reviews. As well, the Foundation monitors projects' progress and evaluation through site visits and approval of annual reports.[472] Plan Vivo accepts both *ex ante* and *ex post*

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[468] Plan Vivo, *supra* note 261.

[469] *Ibid*.

[470] Stockholm Environment Institute. Online: <http://www.co2offsetresearch.org/policy/PlanVivo.html#Eligibility>.

[471] Plan Vivo Standards, *supra* note 270 at 43-45.

[472] *Ibid.* at 35-36.

methodologies for generation of Plan Vivo Certificates; each certificate represents reduction/avoidance of one metric tonne of carbon dioxide.[473] Both *ex ante* and *ex post* methodologies must meet the same requirements, including long-term monitoring, carbon buffers, independent validation and verification.[474] Despite the risks associated with *ex ante* crediting, Plan Vivo accepts its importance as it "has been shown to be instrumental in getting projects off the ground in poorer countries."[475]

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[473] Plan Vivo, *supra* note 261.

[474] *Ibid*.

[475] *Ibid*.

Table 12: PLAN VIVO REQUIREMENTS

REQUIREMENTS

Plan Vivo-approved projects must provide benefits to the local community and environment. These benefits are quantified through application of the following criteria:

Ecosystem Benefits

Planting activities are restricted to **native and naturalized species**.

Naturalized (i.e. non-invasive) species are eligible only where they can be shown to have compelling livelihood benefits and:

1. Producers have clearly expressed a wish to use this species;

2. The areas involved are not in immediate proximity to conservation areas or likely to have any significant negative effect on biodiversity;

3. The activity is still additional, i.e. the producers in the area are not doing this activity, or are not able to do this activity, without the intervention and support of the project;

4. The activity will have no harmful effects on the water table.

Wider **ecological impacts** have been expressly identified and considered, including impacts on local and regional biodiversity and impacts on watersheds.

Livelihood Benefits

The project must have undergone a **producer/community-led planning process** aimed at identifying and defining sustainable land-use activities that serve the community's needs and priorities.

Mechanisms are in place for **continued training** of producers and participation by producers in project development.

The project must have procedures for entering into **sales agreements** with producers based on saleable carbon from Plan Vivo, where:

- Producers have recognized carbon ownership via tenure or land-use rights;
- Agreements specify quantity, price, buyer, payment conditions, risk buffer, and monitoring milestones;
- An equitable system is in place to determine the share of the total price which is allocated to the producer;
- Producers enter into sale agreements voluntarily.

The project must have an effective and transparent process for the timely administration and recording of **payments to producers**, where:

- Payments are delivered in full when monitoring is successfully completed against targets in sales agreements;
- Payments are recorded in the project database to ensure traceability of sales.

APPENDIX V: CFS PROGRAM

CFS accepts land-use projects that convert non-forested land into forests, including: planted conservation forests; planted sustainably managed forests; agro-forestry; and protected areas that change from non-forested to forested land use.[476] These projects operate primarily in rural areas of developing countries that lack financial, technical and institutional capacity. Project certification can occur in a number of ways, including via compliance with CDM Afforestation/Reforestation (A/R) methodology or demonstration that external financial or legislative programs do not support the project. In addition, project developers are required to show that the proposed activities would not have occurred in the absence of the project.[477] The CFS also has criteria for ensuring that socio-economic and environmental benefits result from the project (**Table 13**).[478]

In order to retain certification, verification intervals must be followed, including regular monitoring at two years, four years, and then every five years for the duration of the project.[479] Every socio-economic and environmental impact must be documented and updated at the end of every verification interval.

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[476] CarbonFix, *supra* note 276; Merger, *supra* note 367.
[477] CarbonFix Methodology, *supra* note 289 at 8.
[478] *Ibid. at* 11.
[479] Merger, *supra* note 367 at 31.

Table 13: CARBONFIX

REQUIREMENTS

REQUIREMENTS
CarbonFix criteria ensure that projects comply with best practices in sustainable forest management, while providing socio-economic and environmental benefits.
EVALUATION CRITERIA
SOCIO-ECONOMIC
Projects must have positive socio-economic benefits ensured by: • Creation of employment • Capacity building • Cooperation with project's neighbourhood • Work conditions and safety • Clear conflict solving and decision-making processes
ENVIRONMENTAL
Projects must demonstrate positive impacts considering: • Soil • Water • Biodiversity