

The Expansive Canopy of Korean Green Growth: Key Aspects for Forest Conservation Projects in Southeast Asia*

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Abstract

This article provides an international law context for Korea's Low Carbon, Green Growth Fundamental Act (the "LCGGFA") in order to illustrate potential applications of the LCGGFA in multinational forest conservation-related projects. The international law of sustainable development and ongoing efforts to address climate change are described. Korea's relevant history and recent lawmaking are then introduced, with a special focus upon the LCGGFA's structure and its distinctive features. The article then analyzes potential transplantations of various concepts and structures of the LCGGFA to other legal systems. The final section of the article focuses upon particular methods by which Korean law and policy can facilitate forestry-related conservation and sustainable economic development projects, such as in heavily rainforested nations of Southeast Asia. I hope that this assessment will prove helpful as governments and private parties consider concrete steps to achieve durable and equitable carbon emission reductions in the forestry sector.

I. Introduction

Rainforests are frequently described in terms that underscore their central ecological value to the planet, both as generating vital utility and as possessing indefinable intrinsic worth. Whether referenced as "the world's lungs"¹⁾ or "a renaissance painting,"²⁾ the rhetoric surrounding rainforests

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1) See, e.g., *The world's lungs*, *ECONOMIST*, Sept. 23, 2010, available at <http://www.economist.com/node/17093495>.

2) To quote biologist E.O. Wilson, "Destroying rainforest for economic gain is like burning a Renaissance painting to cook a meal." R. Z. Sheppard, *Nature: Splendor in The Grass*,

resounds with their significance to human prosperity and well-being. However, efforts to develop domestic and international policies that successfully safeguard the preservation of rainforests have proven, at best, insufficient to reverse the global trend of continual elimination of vast tracts of forest.³⁾ While preserving the diversity and richness of forest ecosystems is a significant policy goal,⁴⁾ the carbon emissions-impact of deforestation⁵⁾ and its significant contribution to the accumulation of greenhouse gases in the Earth's atmosphere⁶⁾ has propelled afforestation and reforestation to prominence in international environmental law and policy discourse.⁷⁾ Recent efforts to curb rainforest destruction have sought to recognize the simultaneous need in rainforest-dense nations to achieve economic

TIME Sep. 3, 1990.

3) Deforestation has been occurring rapidly; between 1990 and 2005, the global rate was approximately 13 million hectares of net deforestation per year. Erin C. Myers Madeira, *POLICIES TO REDUCE EMISSIONS FROM DEFORESTATION AND DEGRADATION (REDD) IN DEVELOPING COUNTRIES* 18 (2008). The rate of deforestation is relatively higher in the tropical rainforest regions, which are particularly dense carbon sinks. FAO, UNDP and UNEP, *UN COLLABORATIVE PROGRAMME ON REDUCING EMISSIONS FROM DEFORESTATION AND FOREST DEGRADATION IN DEVELOPING COUNTRIES (UN-REDD) 1* (2008), available at <http://www.un-redd.org/AboutUNREDDProgramme/tabid/583/Default.aspx>. See also R. A. Butler, *A World Imperiled: Forces behind Forest Loss*, *TROPICAL RAINFORESTS: IMPERILED RICHES—THREATENED RAINFORESTS* (2007), available at <http://rainforests.mongabay.com>.

4) See Institute for Global Environmental Strategies, *CLIMATE CHANGE POLICIES IN THE ASIA-PACIFIC: RE-UNITING CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT* 81–85 (2008).

5) Land use changes (especially in the context of deforestation) account for approximately 15 to 20 percent of carbon dioxide emissions, more than the total worldwide emissions attributable to the transportation sector. See Van der Werf et al., *CO₂ emissions from forest loss*, *NATURE GEOSCIENCE* 737–38 (2009); Erin C. Myers Madeira, *POLICIES TO REDUCE EMISSIONS FROM DEFORESTATION AND DEGRADATION (REDD) IN DEVELOPING COUNTRIES* 18–19 (2008); Daniel Zarin et al., *Reducing Emissions from Deforestation and Forest Degradation (REDD): An Options Assessment Report 1* (2009), available at http://www.redd-oar.org/links/REDD-OAR_en.pdf.

6) Forest destruction and degradation account for the second-largest source of carbon emissions, after fossil fuel combustion. H. H. Rogner et al., *Introduction*, in *CLIMATE CHANGE 2007: MITIGATION* (B. Metz et al., eds. 2007).

7) To reference just one illustration, in comments made after accepting the Nobel Peace Prize in 2009, United States President Barack Obama stated, “[Afforestation is] probably the most cost-effective way for us to address the issue of climate change — having an effective set of mechanisms in place to avoid further deforestation and hopefully to plant new trees.” John Vidal, *Copenhagen: Barack Obama backs Norway-Brazil forest protection plan*, *THE GUARDIAN* (Dec. 10, 2009), available at <http://www.guardian.co.uk/environment/2009/dec/10/obama-backs-norway-brazil-forest-plan>.

development while maintaining the integrity of ecosystems.⁸⁾ It is of critical importance to consider what administrative approaches may be adapted and utilized to harness the dual demands of environmental and economic vitality, and thus to meaningfully progress towards stable and enduring afforestation outcomes.⁹⁾

The history of the Republic of Korea (“Korea”) since the devastating consequences of the Korean War has been one of continual reinvention.¹⁰⁾ In less than 60 years, Korea has experienced numerous political upheavals, most recently and dramatically the ratification of the 1987 Constitution and the subsequent transition to procedurally fair elections and the implementation of democratic institutions.¹¹⁾ Its rapid economic growth has been driven, in part, by several economic transformations. These economic reinventions have corresponded to fundamental changes in the legal and social conditions of the nation.¹²⁾ However, until recently, there have been few credible indications of an enforced legal commitment to environmental protection.¹³⁾

The simultaneous desire for new sources of economic growth and expanding popular support for serious and internationally accountable environmental responsibility has most recently provided the catalyst for

8) See Institute for Global Environmental Strategies, *supra* note 4, at 79–100.

9) This article considers as part of international forestry-related policy both afforestation (the cessation of deforestation in a particular area during a specified and aspirationally perpetual time horizon) and reforestation (the restoration of forest cover to previously deforested areas).

10) This is a national image that Korean state institutions deliberately seek to cultivate and promote, especially in presenting Korea as a model of rapid development and transition from the developing world to the developed one. In fact, the objective of raising Korea’s international stature and reputation is an explicitly stated legislative objective of the recently promulgated Low Carbon, Green Growth Fundamental Act. In three separate articles, the LCGGFA states a purpose related to improving or advancing Korea’s status in the international community. Jeotanso Noksakseongjang Gibonbeop [Low Carbon, Green Growth Fundamental Act] No. 9931, Jan. 13, 2010.

11) See generally MICHAEL J. SETH, *A CONCISE HISTORY OF MODERN KOREA: FROM THE LATE NINETEENTH CENTURY TO THE PRESENT* (2010); Tom Ginsburg, *Introduction: The Politics of Legal Reform in Korea*, in *LEGAL REFORM IN KOREA* (Tom Ginsburg, ed. 2004).

12) See e.g., Jisoon Lee, *GREEN GROWTH*, 24–31 (2010).

13) Hong Sik Cho, *The Pathology of Korea’s Under-Enforcement of Environmental Law: Is Public Awareness and Deliberation the Key to Success?*, 4. U. TOKYO J. L. AND POL., 47–64 (2007).

Korea's "green growth vision."¹⁴⁾ First articulated by current Korean President Lee Myung-Bak in 2008,¹⁵⁾ and embedded in statutory law by the Low Carbon, Green Growth Fundamental Act (the "LCGGFA" or the "Act")¹⁶⁾ in 2010, Korean green growth is promoted as a simultaneous revolution in the foundational elements of the Korean economy and a dramatic step in the direction of serious environmental protection.

Korea's recent history of rapid economic development and its modern approach of synthesizing economic and environmental goals provide potentially fertile source material for designing international cooperation on forest preservation. In this article, I consider the LCGGFA as potentially transplantable model legislation and as a partial basis for advancing international cooperation on discrete carbon emissions-mitigation projects, especially as related to the initiative Reducing Emissions from Deforestation and Forest Degradation ("REDD").¹⁷⁾ The article briefly

14) Green growth is often compared and contrasted to sustainable development, an international law concept counseling in favor of balanced economic, environmental, and social equity considerations in policy-making; one common criticism of the LCGGFA is that it captures the economic and environmental prongs of sustainable development, but fails to reflect the social justice orientation embedded within sustainability theory. Mun Sang-Deok, *Noksaekseongjanggibonbeope Gwanhan Hwankyeongbeopjeok Geomto* [A Study on Green Growth Act from the Point of View of Environmental Law], 31 HWANGYEONGBEOPYEONGU 1 [ENVTL. L. STUD] 15, 37-38 (2009); Hahm Tae-Seong, 'Noksaekseongjang'gua 'Jisokganeunghaljeon'ui Gwangyejeongripe Gwanhan Beopjeokgochal [A Legal Study on the Relationship between 'Green Growth' and 'Sustainable Development'] 31 HWANGYEONGBEOPYEONGU 1 [ENVTL. L. STUD] 355, 375-76 (2009). I note several key points of comparison between the two concepts, in theory and in practice, *infra* Sec. III.C.

15) The green growth vision was outlined in a policy address delivered by President Lee on August 15, 2008, the sixtieth anniversary of the founding of the Korean republic. For a discussion, see Lee Maan-ee, *Korea Needs to Change Development Paradigm*, KOREA TIMES, Feb. 12, 2009, available at http://www.koreatimes.co.kr/www/news/special/2011/04/270_39450.html.

16) Act No. 9931, Jan. 13, 2010.

17) REDD is an international initiative that promotes the reduction of deforestation in nations throughout the world, with a particular emphasis on the tropical rainforest regions that contain high concentrations of sequestered carbon in the organic matter of the forest. See generally <http://www.un-redd.org/>; Zarin, *supra* note 6. In this article, I discuss the relationship of Korean green growth policy to afforestation and reforestation programs generally, while recognizing that multinational implementation of forest conservation projects would likely utilize existing REDD and REDD+ institutional channels.

sketches the general parameters of the greenhouse gas (“GHG”) emission¹⁸⁾ and climate change issue, as well as an overview of major international forums and promulgations related to climate change mitigation efforts. I then provide background on Korea’s engagement with this issue, with a focus on the LCGGFA. The article then describes key international applications of this legislation and its potential role in advancing REDD and REDD+¹⁹⁾ legal and political infrastructure in Southeast Asia. I hope that this article can usefully contribute to discussion of the international context and relevance of the green growth paradigm and its potential impact on forest conservation.

II. International Law Context

Environmental challenges are global in character and present distinct problems of incentivizing separate and collective actions by public and private parties. In this section, I briefly describe the nature of these challenges before focusing on existing international efforts to harmonize and implement environmental law standards. These efforts face considerable practical and administrative burdens, but are catalyzed by the potential enormity of environmental risks and an arguably weighty obligation to account for the future costs of present environmental policy-related actions.²⁰⁾ International forums for negotiation have been

18) GHG emission analyses often focus upon carbon dioxide as the predominant GHG emission; however, other gases also incrementally contribute to the atmospheric chemistry that acts to trap more heat within the biosphere; such gases include methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride. These gases, along with CO₂, are defined as GHG emissions in the Kyoto Protocol. See Kyoto Protocol to the United Nations Framework Convention on Climate Change (the “Kyoto Protocol”), UN Doc FCCC/CP/1997/7/Add.1, Annex A (1997), available at <http://unfccc.int/resource/docs/convkp/kpeng.html>. In this article, I often focus upon carbon dioxide in particular, while seeking to recognize the collective importance of all GHG emissions in assessing and managing the anthropogenic contribution to climate patterns.

19) For a discussion of some of the complex implications of international REDD efforts, see Jacob Phelps et al., *Does REDD+ Threaten to Recentralize Forest Governance?*, 328 SCI. 312, 312–313 (2010), available at <http://www.sciencemag.org/content/328/5976/312.full>.

20) Compare Nicholas Stern, *THE ECONOMICS OF CLIMATE CHANGE: THE STERN REVIEW* (2007), with William Nordhaus, *A QUESTION OF BALANCE: WEIGHING THE OPTIONS ON GLOBAL WARMING*

consistently and widely engaged by almost all nations and many non-governmental organizations, even though outcomes have thus far been limited and uneven.²¹⁾ I focus upon the general emergence of “sustainable development” and specific efforts related to climate change mitigation as two of the dominant features of contemporary international environmental law. Both are also central to understanding the purpose and nature of Korea’s green growth strategy.

1. *Global Environmental Challenges*

Amongst the environmental challenges facing the societies of the world, climate change, destruction of habitat and reduction of biodiversity,²²⁾ ozone depletion, and natural resource management all have significant global impacts.²³⁾ Loss of environmental resources, including biodiversity and depletion of finite resource deposits, may affect proximately located societies most immediately, but the consequences are not constrained by political borders. The climate-related impacts of GHG emissions and the depletion of ozone have a directly global impact. Although GHG emissions and emissions of ozone-destroying substances originate in a particular geographic location, once released they alter the chemistry of the entire planet’s atmosphere. The accumulation of all the relevant emissions in the world collectively affects the atmospheric concentrations of each GHG.²⁴⁾

POLICIES (2008). See also Dave Wright, *THE CLEAN DEVELOPMENT MECHANISM 4-5* (2007).

21) Wide participation in climate change mitigation negotiations may, in fact, be a source of bargaining inefficiency. See Robert Stavins, *Opportunities and Ironies: Climate Policy in Tokyo, Seoul, Brussels, and Washington*, BELFER CENTER, Mar. 21, 2010, available at <http://belfercenter.ksg.harvard.edu/analysis/stavins/?p=568>.

22) While the impacts of biodiversity loss may be less obviously of a shared and global character, the elimination of a feature or component of the natural world and the resultant qualitative injury to ecological richness is not a harm necessarily limited by geopolitical boundaries. See, e.g., Richard L. Revesz, *Federalism and Environmental Regulation: Lessons for the European Union and the International Community*, 83 VA. L. REV. 1331, 1344 (1997).

23) See Jonathan B. Wiener, *Global Environmental Regulation: Instrument Choice in Legal Context*, YALE L. J. 677, 690-91 (1999) (discussing the “global public good” of minimizing externalities with an uncontainably international character).

24) Such consequences themselves are different and distinct in particular locations at particular points in time, but not in a manner systematically related to the location of GHG emission activities. The most dramatic illustration may be Antarctica, where almost no GHG

The difficulty of comprehensively containing environmentally detrimental activities is great, especially where impacts have no boundaries, but socially orchestrated responses are impacted and often constrained by jurisdiction-specific considerations.²⁵⁾ In the face of inaction and even obstruction by various sovereign participants in climate change negotiations, explanations range from skepticism of climate change science by citizen populations²⁶⁾ to notions that some nations expect to be, at least from a comparative standpoint, “climate change winners.”²⁷⁾

A particular concern that frustrates specific action on climate change is “leakage,” the potential problem that prevention or mitigation of harm in

emissions originate, yet where dramatic changes in average temperature and climate patterns have occurred across the continent. For instance, in the Western Antarctic Peninsula, the average temperature has increased 10.8 degrees Fahrenheit (6 degrees Celsius) in the last 50 years. Andy Isaacson, *In Changing Antarctica, Some Penguins Thrive as Others Suffer*, N.Y. TIMES (May 9, 2011), available at http://www.nytimes.com/2011/05/10/science/10penguins.html?_r=1&scp=2&sq=antarctica&st=cse.

25) To utilize concepts for understanding the general nature of the problem, harm reduction as a global public good (where the interests of a particular sovereign state within which harmful externalities are reduced receives only a fraction of the benefit, which is roughly shared by all parties in the world) gives rise to a collective action problem, where the benefits of free-riding or other “defection” from mutual commitments creates a perverse incentive for all individual parties to engage in as little sacrifice as possible, or even none at all.

26) In nations where a significant proportion of the citizenry do not accept the idea that human behavior impacts climate patterns, and where others do not support the modification or development of policy to address or counteract such effects, supporters of mitigation strategies are compelled to craft justifications that can account for popular opposition and can manage to resist majoritarian-inspired reversal of such policies through time. In one example quite relevant for international climate change negotiations, popular concern about the risk of climate change has been volatile in the United States and, as of late, appears to be waning. *See Americans cooling on climate change, survey says*, CNN, Jan. 27, 2010, available at http://articles.cnn.com/2010-01-27/world/climate.report.america.trust_1_climate-change-climate-skeptics-climate-leaders?_s=PM:WORLD (citing a Yale University and George Mason University survey that found “[f]ifty-seven percent of Americans polled at the end of 2009 and early 2010 believe climate change is happening compared with a figure of 71 percent in October 2008”).

27) Some nations may believe that they stand to gain from the implications of climate change, or at least to suffer a lesser detriment than other countries. That some nations are particularly vulnerable and would suffer incomparably greater short-term consequences is evident. The Maldives, for instance, faces the risk that much of the island nation will be submerged due to rising sea levels. John H. Knox, *Linking Human Rights and Climate Change at the United Nations*, 33 HARV. ENV'T L. REV. 477, 479–484 (2009).

one location may simply give rise to a collateral and equivalent harm in another location.²⁸⁾ In the context of carbon emissions from deforestation, the prevention of forest destruction in one locale might result in deforestation activities elsewhere, counteracting part or all of the perceived ecological and net emissions-reduction benefit. Protection of a particular area of forest may simply cause parties engaged in deforestation to relocate to an area where forest preservation policies are not enforced or are not subject to attentive monitoring and meaningful law enforcement. In such a case, net deforestation activities have not been reduced (or have been reduced to a lesser extent than first appearances suggest); the site of the deforestation has merely shifted.

While international efforts to negotiate a binding and comprehensive structure for mitigation of GHG emissions and adaptation to climate change impacts continue, the challenges of formulating international agreement and cooperating on meaningful implementation are multifaceted and complex. Currently, the only purportedly binding treaty obligations in place arise under the Kyoto Protocol (which only defines binding carbon emission levels for the European Union, the United States and Japan, and the United States refused to ratify the document).²⁹⁾ Under the circumstances, there is both need and opportunity for creativity in the domestic policies of individual nations and multilateral cooperation between nations. Innovative policymaking on these levels would ideally provide incremental contributions to the process of climate change mitigation, construct actuated mechanisms for collaboration and policy implementation which could be adapted or generalized for broader utilization in future international efforts, and establish for the nations involved an advantageous “first mover” position in emerging “green

28) One inexorable fact of environmental protection and climate change mitigation policies is that they require mutual support and adherence through time; international agreements are difficult to reach and easily broken. For a discussion of the frailty of the Kyoto Protocol, see, e.g., Heike Schroeder, *The History of International Climate Change Politics: Three Decades of Progress, Process and Procrastination*, THE POLITICS OF CLIMATE CHANGE (Maxwell Boykoff, ed.) 26, 30–38 (2010).

29) Kyoto Protocol, *supra* note 19, at Annex B; United Nations Framework Convention on Climate Change, *Status of Ratification of the Kyoto Protocol*, available at http://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php.

industries” and markets.³⁰⁾ Before elaborating upon Korea’s primary legislative effort to craft a domestic green economy policy to pursue these objectives, we first consider the two main areas of international law that have emerged in response to environmental and economic challenges: the ubiquitous theme of “sustainable development” in international law and policy, and international efforts to date to mitigate anthropogenic contributions to climate change.

2. International Legal Response

1) Developing Sustainable Development

Sustainable development has long been a touchstone concept³¹⁾ of international economics, environmental policy, and political science.³²⁾ It guides policymakers to account for the “3E” elements (economy, environment, and social equity) and advances a vision of implementing this balance of objectives at jurisdictional levels ranging from local governments to global organizations.³³⁾ In the 2005 United Nations World Summit Outcome Document, it was stated that “sustainable development in its economic, social and environmental aspects constitutes a key element of the overarching framework of United Nations activities.”³⁴⁾

Sustainable development emerged through time as distinguishable from, and generally preferred by policymakers over, other environment-

30) For a discussion of competitive issues surrounding “green industries,” see Elisabeth Rosenthal, *U.S. Is Falling Behind in the Business of ‘Green’*, N.Y. TIMES, June 8, 2011.

31) The introduction of the sustainable development concept arguably dates back to several United Nations-related conferences and declarations of the early 1970s, such as the 1972 United Nations Conference on the Human Environment and the Stockholm Declaration on the Human Environment, UN Doc. A/C.48/14 (1972). See G. D. Meyers and S. C. Muller, *The Ethical Implications, Political Ramifications, and Practical Limitations of Adopting Sustainable Development as National and International Policy*, 4 BUFF. ENVTL L.J. 1, 2-3 (1996).

32) Sustainable development was explicitly stated in United Nations promulgations as a foundational principle of ecological and economic policy in 1980. See *World Conservation Strategy of the International Union for the Conservation of Nature*, UNGA Res. 7, UN GAOR 36th Sess., Supp. No. 51, UN Doc. A/51 (1982).

33) See *Johannesburg Declaration on Sustainable Development*, in REPORT OF THE WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT, Johannesburg, South Africa, A/CONF.199/20, United Nations (2002).

34) United Nations, 2005 WORLD SUMMIT OUTCOME, A/Res/60/1, p. 2.

related principles, such as the pre-existing “deep ecology” and “environmental justice” concepts.³⁵⁾ However, significant questions exist over whether a more precise definition of sustainable development can gain international consensus.³⁶⁾ Experts also disagree over whether such a definition is necessary to promote the underlying objectives of sustainable development.³⁷⁾ In practice, sustainable development continues to be deployed as a foundational concept. Some proponents favor the concept’s broadness, believing that definitional agreement is only possible at this level of generality.³⁸⁾

Attempts to provide a more precise meaning of sustainable development, in theory and in practice, have also been fraught with disagreement. Experts debate whether applications of the sustainable development concept place too much emphasis on foreseeable enhancements in the economic development of each society, and whether the concept can be utilized to broadly delineate the manner by which economic and environmental objectives are to be balanced. Varying explications of sustainable development, for instance, have been modified as “*ecological sustainable development*” and as “*economic sustainable*

35) See J.B. Ruhl, *The Co-Evolution of Sustainable Development and Environmental Justice: Cooperation, then Competition, then Conflict*, 9 DUKE ENVTL. L. & POL’Y F. 161 (1999).

36) See, e.g., P.R. Berke and M. Conroy, *Are We Planning for Sustainable Development?*, 66 J. AMER. PLANNING ASSOC. 21 (2000).

37) See Meyers and Muller, *supra* note 31, at 3–15. Meyers and Muller argue for a more “concrete” definition of sustainable development and propose the following: “development which either improves, maintains, or does not materially interfere with the ecological structure and functions of the [geographic] area in which such development takes place.” *Id.* at 15. As a first critical observation, I would assert that in a world with fewer economic and social barriers and no effective boundaries for containing environmental impacts, this definition should not limit its scope to interfering impacts only within the immediate geographic area of particular development. Further, from the standpoint of the diplomatic and other geopolitical implications of activities with observable and known ecological consequences, “sustainability” as a matter of international relations assumes an inter-jurisdictional dimension.

38) Such a view holds that sustainable development should be promoted as a universal principle, even if consensus is currently only possible for a broad understanding of the concept. On the other hand, it can be argued that consensus is not legally or socio-politically meaningful without agreement about substantive meaning and at least some policy implications of sustainable development.

development.”³⁹⁾ The former indicates that ecosystems are to be sustained, or at least that the human impact upon the dynamic state of ecosystems should as a first matter be minimized. The latter reaches environmental protection (and minimization of human impact upon the environment) derivatively, because environment is an instrumentality of continuous economic growth.

2) *Climate Change Law*

Climate change and GHG mitigation policies illustrate the relationship between environmental and economic objectives as applied to law. Under an explicitly economic orientation, GHG emissions are mitigated because the estimated costs that climate change will inflict upon societies outweigh the present costs of mitigation.⁴⁰⁾ Even if degradation or other transformation of ecosystems due to climate change were not counted as a relevant cost, mitigation of carbon emissions may nonetheless reduce the anthropogenic impact upon natural ecosystems. The inclusion of these impacts in the cost-benefit analysis, however, may in some actual cases have an important effect on analytical outcomes and the policies that are enacted based upon them.⁴¹⁾ Key choices, such as what impacts to include as costs and at what rate to discount future costs, are essential considerations.⁴²⁾ The following briefly summarizes major international events and agreements related to climate change mitigation strategies and

39) *Compare* World Commission on Environment and Development, *OUR COMMON FUTURE* 308 (1987) (asserting that “human survival...could depend on success in elevating sustainable development to a global ethics”), *with* Margaret Thatcher, Speech to the Royal Society (Sept. 27, 1988) (stating that “[s]table prosperity can be achieved throughout the world provided the environment is nurtured and safe guarded”).

40) The analysis of costs is vitally impacted by the choice of discount rate for future benefits and harms. Two competing visions of climate change mitigation policies, for instance, have been advanced and distinguished on the basis of differing views of discount rate. *See* Stern, *supra* note 20 (advocating for a low discount rate as consistent with the “precautionary principle”); Nordhaus, *supra* note 20 (defending a higher discount rate). *See generally* David Weibach and Cass Sunstein, *Climate Change and Discounting the Future: A Guide for the Perplexed*, 27 *YALE L. & POL’Y REV.* 433 (2009).

41) On the level of underlying principles and values, these decisions also weigh heavily upon the extent to which inter-generational justice and social sustainability are emphasized, although these concepts may not be interpreted to support any single outcome.

42) *See* Weibach & Sunstein, *supra* note 40.

commitments, with an emphasis on those aspects of the international process most essential to understanding Korea's present situation and the role of forest-related projects in the broader framework of managing GHG emissions.

Evidence of the rising concentrations of carbon dioxide in the atmosphere has been collected continuously since the 1950s as part of a United States research initiative in Hawaii.⁴³⁾ Prior to the drafting and ratification of the United Nations Framework Convention on Climate Change (the "UNFCCC") in 1992, several conferences raised international awareness of climatological change and concern that anthropogenic factors were contributing to potentially harmful alterations of climate patterns around the world.⁴⁴⁾ The UNFCCC entered into force in 1994,⁴⁵⁾ and it has to date been signed by 192 nations and the European Economic Community, amounting to almost universal membership in the treaty.⁴⁶⁾ The stated goal of the UNFCCC is to achieve "stabilization of GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system."⁴⁷⁾

The UNFCCC did not establish binding obligations for signatory nations, but stated the general aspiration that developed nations would

43) Schroeder, *supra* note 28, at 26-27.

44) Such conferences included two World Climate Conferences, in 1979 and 1990. M. Patterson, *Global Warming and Global Politics* 26-34 (1996). The Intergovernmental Panel on Climate Change ("IPCC") was established in 1988 under the auspices of the United Nations Environmental Programme in conjunction with the World Meteorological Organization. See *Intergovernmental Panel on Climate Change*, <http://www.ipcc.ch/>. The creation of the IPCC was, at least in part, an effort to structure scientific efforts and to channel applications of science to policy within the ambit of a state-directed (and arguably a political) process; however, conflicts have frequently surfaced as the implications of the IPCC's function of presenting "scientific, technical and socio-economic information relevant for the understanding of human induced climate change, potential impacts of climate change and options for mitigation and adaptation" (http://www.ipcc.ch/publications_and_data/publications_and_data.shtml#1) have diverged from policy preferences of many nations. See Chukwumerije Okereke, *The Politics of Interstate Climate Negotiations*, in *THE POLITICS OF CLIMATE CHANGE* (Maxwell Boykoff, ed.) 42, 43-44 (2010).

45) Under the terms of the UNFCCC, it entered into force following ratification, acceptance, approval or accession by 50 nations. Art. 23(1).

46) *United Nations Framework Convention on Climate Change, Status of Ratification*, http://unfccc.int/files/na/application/pdf/unfccc_ratification_20090826.pdf.

47) UNFCCC, art. 2.

reduce their GHG emissions to 1990 levels.⁴⁸⁾ Without specifying the substantive content of policies designed to achieve emissions reductions and stabilization or other benchmarked goals, the text established processes and mechanisms by which future agreement could be advanced. Under the UNFCCC, a Conference of the Parties (“COP”) is held periodically to review existing measures taken in response to the UNFCCC and to provide a forum for expanding and concretizing international climate change commitments.⁴⁹⁾ Since 1995, a COP has been convened at least once annually (and with the exception of two conferences in 2001, exactly once annually). Of particular note are COP 3, which gave rise to the Kyoto Protocol; COP 13 in Bali; and the most recent conferences, COP 15 in Copenhagen and COP 16 in Cancun.

COP 3 in Kyoto developed the Kyoto Protocol, which articulated an overall objective of reducing GHG emissions by 5% relative to 1990 emissions in the commitment period of 2008 through 2012.⁵⁰⁾ The Kyoto Protocol established specific national targets relative to the benchmark of 1990 emissions, with binding reductions for the European Union (8%), the United States (7%), and Japan (6%).⁵¹⁾ The Kyoto Protocol identified three special mechanisms for advancing climate change mitigation efforts: emissions trading, the clean development mechanism (the “CDM”), and joint implementation. Joint implementation embraced the existing notion in international environmental law that developed countries undertaking affirmative obligations can coordinate efforts to seek the most cost-effective means of inter-jurisdictionally mitigating emissions.⁵²⁾ The CDM extended this approach to collaborative efforts between developed and developing nations, a highly meaningful step because it empowered nations to pursue the particular cost effectiveness possible through the efficient transfer of technologies to, and investment in, nations that have significant potential for mitigation but lack the pre-existing infrastructure or economic incentives to realize such mitigations without external assistance and

48) *Id.* art. 4.

49) *Id.* art. 7.

50) Kyoto Protocol, *supra* note 18, art. 25(1).

51) *Id.* at Annex B.

52) Schroeder, *supra* note 28, at 33.

inducement.

For its numerous innovations, the Kyoto Protocol sought to impose reduction obligations on only three political entities. One of them, the U.S., declined to ratify the document, citing its lack of affirmative obligations for other nations.⁵³⁾ Furthermore, serious questions exist about whether the EU has seriously advanced a carbon mitigation agenda, even in light of its existing emissions trading system.⁵⁴⁾ Kyoto's frailty has many contributing factors. In general, one arguable source of the lack of robustness of the Kyoto Protocol was perceived procedural inadequacies throughout negotiation and drafting, such as lack of participation and consent from all stakeholders, absence of agreed criteria for assigning obligations, and the ultimate exclusion of many nations, including emerging developed nations such as Korea and many of the largest carbon emitters, conspicuously China, from affirmative obligations to mitigate emissions.

By the time of COP 13 in Bali, Indonesia,⁵⁵⁾ attention had shifted to devising a "post-Kyoto" international regime that could secure broader participation and compliance and yield deeper emission reductions. The conference produced the "Bali Road Map."⁵⁶⁾ The Bali Road Map delineated a two-year plan which was to culminate in the creation of a binding international climate change program by COP 15 in 2009,⁵⁷⁾ to take effect by 2012, the end of the Kyoto Protocol commitment period. COP 13 is also remarkable for its explicit discussion, in Decision 2,⁵⁸⁾ of the benefits of

53) Stated rationales included the assertion that the Kyoto Protocols goals were "arbitrary and ineffective in nature," that "many countries of the world are completely exempted from the Protocol, such as China and India," and that "the Protocol could have potentially significant repercussions for the global economy." United States Embassy Public Affairs Section, *Fact Sheet: United States Policy on the Kyoto Protocol*, <http://www.usembassy.at/en/download/pdf/kyoto.pdf>.

54) See, e.g., Malcolm Dowden, *CLIMATE CHANGE & SUSTAINABLE DEVELOPMENT* 49-53 (2008).

55) See *The United Nations Climate Change Conference in Bali*, http://unfccc.int/meetings/cop_13/items/4049.php.

56) The decisions and resolutions collectively constituting the Bali Road Map are available at <http://unfccc.int/documentation/decisions/items/3597.php?such=j&volltext=/CP.13#beg>.

57) See Report of the Conference of the Parties on its thirteenth session, Bali Action Plan, Decision 1, art. 2, FCCC/CP/2007/6/Add.1 (2008), available at <http://unfccc.int/resource/docs/2007/cop13/eng/06a01.pdf#page=3>.

58) Decision 2, FCCC/CP/2007/6/Add.1 (2008), available at <http://unfccc.int/resource/>

forest-related emission mitigation efforts. The Bali meetings marked an initial success for heavily forested countries in gaining open recognition of the ecological and economic value of forest conservation efforts. The language of Decision 2 focused upon the objectives of securing voluntary support for forest conservation by developed nations, including through technology transfer,⁵⁹⁾ as well as raising recognition of the benefit to forested nations of utilizing rainforest conservation as part of their sustainable development strategies.⁶⁰⁾ The Decision also referenced “positive incentives”⁶¹⁾ without elaborating upon their exact form or the means of institutional implementation (such as through a CDM process of approval, assessment, and generation of carbon emission reduction credits, or “CERs”).

COP 15, hosted in Copenhagen, Denmark, did not produce the binding international agreement anticipated by the Bali Road Map. The contentious conference concluded with the negotiation of a political statement, the Copenhagen Accord, which was “noted” rather than “adopted” due to a lack of consensus.⁶²⁾ The Copenhagen Accord acknowledged the basic elements of concern about climate change, namely that continually rising GHG emissions will likely have a growing impact upon the world climate with detrimental consequences for human welfare.⁶³⁾ It called upon nations, particularly developed nations, to make voluntary pledges to reduce their carbon emissions by 2020.⁶⁴⁾ Korea, though not an “Annex I” nation under the Kyoto Protocol, has an existing pledge to reduce emissions by 30%

docs/2007/cop13/eng/06a01.pdf#page=8.

59) *Id.* art. 2.

60) *Id.* art. 3–4.

61) *See id.* art. 11–12.

62) Opposition by a small number of nations prevented the Copenhagen Accord from being adopted under the UN consensus requirement. These nations included Bolivia, Cuba, Ecuador, Kuwait, and Venezuela.

63) Report of the Conference of the Parties on its fifteenth session, held in Copenhagen from 7 to 19 December 2009 (the “Copenhagen Accord”), FCCC/CP/2009/11/Add.1 (2010), art. 1-3, available at <http://unfccc.int/resource/docs/2009/cop15/eng/11a01.pdf>.

64) Updated information about national participation in the Copenhagen Accord and pledges to date are available at *Who’s On Board With The Copenhagen Accord?*, CLIMATE ACTION NETWORK, <http://www.usclimatenetwork.org/policy/copenhagen-accord-commitments>.

below “business-as-usual” rates by 2020,⁶⁵⁾ indicating that Korea accepts that it has a more prominent international role in mitigation efforts, though not of a nature that would involve absolute stabilization or reduction of carbon emissions at this time.⁶⁶⁾

The most recent Conference of the Parties was held in 2010 in Cancun, Mexico. COP 16 resulted in an adopted agreement.⁶⁷⁾ The principle terms of the agreement recommended that developed nations pledge to reduce emissions under the Copenhagen Accord; encouraged developing nations to plan to mitigate emissions in the future; proposed the creation of a \$100 billion “Green Climate Fund” to assist developing nations with implementation of environmentally friendly policies; and supported a second commitment phase for the Kyoto Protocol to succeed the end of the original commitment period in 2012.⁶⁸⁾ Some praised the outcome for containing constructive steps, such as the institution of a large fund to subsidize environmentally sound practices in the developing world.⁶⁹⁾ The agreement also signaled that, for the present time at least, efforts to construct a binding climate change agreement would focus upon modification and extension of the Kyoto Protocol, rather than a novel legal regime. Amongst the limitations of COP 16 was the lack of commitment by any parties to undertake binding emissions reductions, to finance the Green Climate Fund, or to clarify the continuing dispute over whether any or all developing nations should be included in the affirmative obligations in a post-2012 carbon mitigation agreement.

65) Randall S. Jones and Byungseo Yoo, *Korea's Green Growth Strategy: Mitigating Climate Change and Developing New Growth Engines*, OECD Economics Department Working Papers, No. 798 (2010), available at <http://dx.doi.org/10.1787/5kmbhk4gh1ns-en>.

66) Korea's commitment amounts to a pledge to reduce the rate of increase of carbon emissions during the next decade.

67) Report of the Conference of the Parties on its sixteenth session, held in Cancun from 29 November to 10 December 2010 (the “Cancun Agreements”), FCCC/CP/2010/7/Add.1 (2011), available at <http://unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf#page=2>.

68) *Id.* Sec. III.

69) See, e.g., Robert Stavins, *Why Cancun trumped Copenhagen: Warmer relations on rising temperatures*, THE CHRISTIAN SCI. MONITOR, Dec. 20, 2010.

III. Korean Green Growth

To provide background and context for the LCGGFA, I first describe Korea's economic status and pre-existing role in international environmental law action plans. I then identify central features of the Act and analyze them in the context of Korean law and in the broader scope of international law. Of special note is the highly debated relationship between green growth and sustainable development. This section concludes with a discussion of opportunities arising from the LCGGFA, as well as related obstacles that may frustrate and obfuscate the Act's stated purposes.

1. Korean Situation

At the time of COP 3 in 1997, Korea was an ascendant economy but it argued that it lacked the stable and advanced state of economic development to commit to emission reductions. Ultimately, Korea was not included as an Annex I nation, so it did not undertake any firm commitments related to the mitigation of GHG emissions.⁷⁰⁾ The Kyoto Protocol's limited success in effectuating policy changes has been attributed to many factors, including the lack of ultimate participation by the United States,⁷¹⁾ as well as the failure to constrain heavy carbon-emitting

70) As discussed *supra*, only emissions reductions for the EU, the United States, and Japan were stated as binding commitments under the terms of the Kyoto Protocol, and only Annex I nations had stated reduction targets.

71) Due to significant decreases in American CO₂ emissions from 2008 to 2009, total U.S. emissions in the calendar year 2009 were the lowest since 1995. U.S. Environmental Protection Agency, *2011 U.S. GHG Inventory Report*, USEPA #430-R-11-005, available at <http://epa.gov/climatechange/emissions/usinventoryreport.html>. Decreases in 2009 were due in significant part due to decreased energy demand and consumption as a consequence of economic recession, raising the question of whether reductions have continued and will continue, and whether current U.S. policy contains insight into constraining GHG emissions independent of patterns of economic production and consumption. *Id.*; see also U.S. Energy Information Administration, *U.S. Carbon Dioxide emissions in 2009: A Retrospective Review*, May 5, 2010, <http://www.eia.doe.gov/oiaf/environment/emissions/carbon/>. It is the stated philosophy of Korean green growth that economic growth and improved environmental protection measures (including the reduction of carbon emissions) are potentially synergistic objectives.

developing economies. For instance, China, a party with no obligations under the Kyoto Protocol, is now the largest carbon dioxide-emitting nation in the world.⁷²⁾ Korea's economic prosperity has continued since the 1990s, and the nation is currently approximately the fifteenth-largest economy by GDP⁷³⁾ and the ninth-largest⁷⁴⁾ carbon emitter.⁷⁵⁾ Due to the lack of revision to the Kyoto Protocol or the creation of a new legal regime, Korea retains its formal status as a non-Annex I nation. However, in any new binding framework, Korea would presumably undertake obligations, even if such a framework continued to exclude at least some developing economies from defined limitations on their emissions.⁷⁶⁾ Taking as possible bases (separately or collectively) for climate obligations historic responsibility for emissions, current total emissions, future projected emissions, or per capita emissions,⁷⁷⁾ Korea's significant present emissions, continuing rate of emissions, and high carbon intensity all counsel in favor of a greater position of responsibility for Korea in international climate change

See Jisoon Lee, *supra* note 12, at 34–36 (defining green growth as “economic growth and economic progress at the same time” and raising the possibility of building “environmental capital” as part of green growth policy).

72) China has been the single largest carbon-emitting nation since 2006, surpassing the emission level of the United States more than a decade earlier than projections had previously anticipated. Mark Levine and Nathaniel Aden, *Global Carbon Emissions in the Coming Decades: The Case of China*, 33 ANNUAL REV. OF ENVIR. & RES. 19, 20 (2008), available at <http://www.annualreviews.org/doi/abs/10.1146/annurev.environ.33.012507.172124>; see also *China now no. 1 in CO₂ emissions; USA in second position*, PBL NETHERLANDS ENVIRONMENTAL ASSESSMENT AGENCY, <http://www.pbl.nl/en/dossiers/Climatechange/moreinfo/Chinanowno1inCO2emissionsUSAinsecondposition>.

73) *World Economic Outlook Database*, INTERNATIONAL MONETARY FUND, <http://www.imf.org/external/pubs/ft/weo/2011/01/weodata/index.aspx>.

74) See Millennium Development Goals Indicators, *Carbon dioxide emissions (CO₂), thousand metric tons of CO₂ (CDIAC)*, <http://mdgs.un.org/unsd/mdg/SeriesDetail.aspx?srid=749&crid=>.

75) Korea is a relatively “carbon-intense” economy, meaning that its carbon emissions per unit of GDP are relatively large.

76) The rationale for such exclusion is that certain nations are not yet economically stable enough or able to generate enough prosperity for the members of the society to achieve a humane standard of living. Such logic no longer seems appropriate as a basis for excluding Korea from the scope of nations assuming restrictive obligations.

77) See Xueman Wang, *Sustainable International Climate Change Law*, in SUSTAINABLE DEVELOPMENT LAW, 350, 353–55 (Marie-Claire Cordonier Segger and Ashfaq Khalfan, eds. 2004).

mitigation efforts.

Furthermore, Korea's potential significance in international negotiations and plans of action may be greater than just as a stakeholder and domestic obligation-enforcer. Korea is uniquely situated in a "bridge" position between developing and developed nations. One of only two nations to transition from charter membership in the G77 to membership in the OECD, Korea is a G20 nation and has realized a sustained and dramatic growth trajectory that has catapulted the nation from total lack of development to wealth and global prominence in approximately 50 years.⁷⁸⁾ In many respects, Korea occupies the status of a developed nation: an aid-provider, capable security ally to the United States, and responsible stakeholder in a variety of international and intergovernmental institutions. Korea possesses considerable material and infrastructural resources, but also an awareness of the essential nature of sustained economic growth for developing nations. Given Korea's impressive developmental trajectory and awareness of the challenges of balancing economic gains with other social goals and international responsibilities, Korea may serve as a relevant and useful model for the conceptualization of "green growth" related policies in developing nations.

Building upon the original work regarding green growth at a United Nations event in Seoul in 2005,⁷⁹⁾ the green growth policy direction was proclaimed by President Lee in 2008, a vision that was generally outlined in a speech in August of 2008.⁸⁰⁾ Under the terms of the specified five-year plan (2008-2013), Korea will devote at least two percent of its annual GDP to environment-friendly economic development and progress towards the longer-term objective of reducing its nationwide carbon emissions by 30%

78) See Jisoon Lee, *supra* note 12, at 23–26.

79) The conference was jointly hosted by Korea's Ministry of Environment and the United Nations. See United Nations Environment Programme, OVERVIEW OF THE REPUBLIC OF KOREA'S NATIONAL STRATEGY FOR GREEN GROWTH, note 2 (2010).

80) President Lee stated, "Green growth refers to sustainable growth, which helps reduce GHG emissions and environmental pollution. It is also a new national development paradigm that creates new growth engines and jobs with green technology and clean energy." Lee Maan-ee, *supra* note 15.

below business-as-usual levels⁸¹⁾ by 2020.⁸²⁾ When many nations appropriated funds for economic stimulus during the global economic downturn in 2008, Korea's publicly financed spending and investment targeted sectors consistent with the green growth vision.⁸³⁾ Korea's similar stimulus package allocated 84% for "green" investment; by comparison, 36% of China's stimulus spending was devoted to these areas, and the United States, 12%.⁸⁴⁾ Of particular note was the funding allocated for river "restoration," accounting for nearly half of the stimulus funds.⁸⁵⁾ More comprehensive legal guidance, and a basic template for the future implications of green growth in Korean society, was provided through the drafting and promulgation of Korea's fundamental law on green growth, the LCGGFA.

2. Key Features of the LCGGFA

A central tenet of the Kyoto Protocol, and international environmental law generally, is policy design and implementation flexibility for individual nations. One perspective on the LCGGFA is that it represents Korea's most concrete and aggressive step thus far in advancing its domestic vision of how to fulfill its own and international aspirations of improved environ-

81) Business-as-usual ("BAU") indicates the rate of carbon emissions that would be produced at a particular point in time, under the most accurate economic projections, in the absence of any deliberate policy mechanisms in place to reduce those emissions. See Hoffert et al., *Energy implications of future stabilization of atmospheric CO₂ content*, 395 NATURE 881, 882 (1998) (defining BAU as the "baseline scenario" for future carbon emissions based upon consensus estimates of population change, economic development, and energy technology in the absence of new government policy related to climate change).

82) See Randall S. Jones and Byungseo Yoo, *Korea's Green Growth Strategy: Mitigating Climate Change and Developing New Growth Engines*, OECD Economics Department Working Papers, No. 798 (2010), available at http://www.oecd-ilibrary.org/economics/kore-a-green-growth-strategy_5kmbhk4gh1ns-en.

83) Korea's stimulus spending was presented as a "green new deal," in reference to the notion of a "new deal" as a set of public investments and activities meant to invigorate the economy and transform the relationship between citizens and the state (in the case of Korea, with a more urgent emphasis on the former). See Lee Maan-ee, *supra* note 15.

84) World Bank, WORLD DEVELOPMENT REPORT 2010 (2010).

85) See Dennis Normille, *Restoration or Devastation?*, 327 SCI. 1568, 1568-70 (2010). This particular green growth-connected investment is analyzed in detail, *infra* Section III.

mental policy. As Korea's defining legislation for its interpretation of international burdens and objectives, certain features are particularly notable and will directly influence the ultimate form and consequences of Korean environmental law.

1) Themes and Principles

The Act provides explicit guidance in the areas of economic growth⁸⁶⁾ and conceptions of environmental responsibility⁸⁷⁾ to be promoted through the Act. Several characteristics of the LCGGFA are important in understanding the role of this legislation in Korean law and its present phase of implementation. The LCGGFA should be noted, firstly, for the characteristic of generality. It sets a broad agenda and indicates certain potential features of future laws and policies,⁸⁸⁾ but does not fully define or specifically enact substantive policies. The Act creates new executive bodies,⁸⁹⁾ imposes general "obligations,"⁹⁰⁾ and delegates power to the administrative state.⁹¹⁾ In that sense, its positive enactments are largely procedural and administrative in nature, establishing a framework of interrelated actors with delegated powers to imbue substance into the green growth concept. However, although the Act is general in terms of legal duties and powers, it specifically identifies topics that are to be addressed.⁹²⁾

The Act seeks to establish a framework of duties, including regulatory obligations and incentivized voluntary behavior, for public and private institutions and individuals. Beyond the general emphasis on responsi-

86) See, e.g., LCGGFA, art. 22-35 (stating provisions relating to "green economy," "green industries," and "green technology").

87) See, e.g., *id.* art. 38 ("Basic Principles for Coping with Climate Change"); art. 51 ("Management of Green Homeland"); art. 55 ("Promotion of Environment-Friendly Agriculture and Fisheries and Expansion of Carbon Sinks").

88) One prominent example is the Act's discussion of the possibility of a cap-and-trade carbon emissions market. *Id.* art. 46.

89) See *id.* art. 14.

90) See, e.g., *id.* art. 7.

91) See, e.g., *id.* art. 3-4, 9.

92) The illustrations of such specific directions are numerous; one example is the article describing improvement of agricultural and fishery practices and the cultivation of carbon sinks. See *id.* art. 55.

bilities for the national government,⁹³⁾ the Act includes local government responsibilities,⁹⁴⁾ business entity responsibilities,⁹⁵⁾ and responsibilities for citizens.⁹⁶⁾ In the Korean context, one might ask whether the force of popular will and desire for environmentally sound social transformation has created the basis for meaningful “citizen responsibilities” for each individual.⁹⁷⁾ The test of whether popular support for these measures exists will arise in the context of future lawmaking to create specific and binding obligations for the general public.

2) Major Provisions

(1) Implementation/Enforcement Measures and Related Government Bodies

The Act establishes a centralized structure of actors oriented around the key decision-maker, the Korean president (the “President”). The Presidential Committee, the executive power-wielding body for the Act, is “instituted under the control of the President.”⁹⁸⁾ The Presidential Committee’s functions are vast and include making key determinations of the basic direction of policies under the Act, the development and execution of the national green growth and climate change strategies, and supervision and support for administrative agencies as they participate in green growth implementation.⁹⁹⁾ The national strategy for green growth, as received and deliberated upon by the Presidential Committee, is effectively developed at the discretion and under the control of the President and includes broad and comprehensive plans relating to the multifaceted concerns of the LCGGFA.¹⁰⁰⁾ The head of each central administrative agency is responsible for establishing and implementing an “action plan”

93) See, e.g., *id.* art. 3–4.

94) *Id.* art. 5.

95) *Id.* art. 6.

96) *Id.* art. 7.

97) For a detailed and comprehensive analysis of the relationship between popular will and the enforcement of environmental law in Korea in general, see Hong Sik Cho, *supra* note 13, at 47–64.

98) LCGGFA, art. 14(1).

99) *Id.* art. 15.

100) *Id.* art. 9.

for that agency, pursuant and responsive to Presidential Decrees.¹⁰¹⁾ Similarly, local government leaders can be instructed by Presidential Decree to advance and implement action plans for the local area in question.¹⁰²⁾ In these matters, the President is situated at the focal point of policymaking and, through the influence he or she exerts on the composition and conduct of the Presidential Committee, the President possesses considerable power for managing green growth-related measures and initiatives.

(2) Measures Bearing on the “National Economy”¹⁰³⁾

Consistent with the many connections between green growth policy and national economic policy, the Act contains many provisions that articulate general principles for the relationship between “green” and “growth,” and provides specific initiatives and policy directions. The executive is instructed to undertake a central role in “materializing green economy,” including by identifying and fostering what he or she considers to be promising industries,¹⁰⁴⁾ and by supervising entity management policy.¹⁰⁵⁾ Further provisions instruct the government to manage and facilitate improvements in resource recycling.¹⁰⁶⁾ Numerous provisions relate to support for research and development and subsequent commercialization of green technology.¹⁰⁷⁾ The Act prescribes the government-facilitated establishment of “green finance” (measures to promote investment in key industries, development of useful financial instruments, and the establishment of a “liquid” carbon market).¹⁰⁸⁾ Tax

101) *Id.* art. 10.

102) *Id.* art. 11.

103) Such measures are manifold. *Id.* art. 26 (Facilitation of Research, Development, and Commercialization of Green Technology), 28 (Support for and Boosting of Finance), 29 (Establishment of and Support for Companies for Investment in Green Industries), 31 (Support and Special Privileges for Green Technology and Green Industries), 32 (Standardization and Certification of Green Technology and Green Industries), and 33 (Support for Medium and Small Enterprises).

104) *Id.* art. 23.

105) *Id.* art. 25.

106) *Id.* art. 24.

107) *Id.* art. 26; art. 31–35.

108) *Id.* art. 28.

policy is to be reformed in the direction of “green” objectives.¹⁰⁹⁾ In general, the character of these provisions is to provide the executive with broad discretion, theoretically limited by an abstract theme of cultivating efficient incentives, but with latitude to exercise regulatory power to stimulate the progress of “green industry.”

(3) Measures Bearing on “Climate Change”

Climate change lies at the heart of international environmental law negotiations and presents in sharp relief the challenge of achieving mutually reinforcing economic growth and environmental protection. The issue of climate change exists as part of the underlying purposive fabric of the Act, and is explicitly discussed in certain key provisions. The government is instructed to compose and implement successive five-year plans for coping with climate change, with the deliberation of the Presidential Committee and the State Council.¹¹⁰⁾ Emission targets shall be set by sector and by individual “controlled entity” (enterprises that emit a certain amount of GHG).¹¹¹⁾ The government is to establish reporting and information management standards for emissions.¹¹²⁾ Of considerable domestic and international interest is the language concerning a GHG emission cap-and-trade system (as the Act describes it, using “market functions”).¹¹³⁾ The Act gives the government the discretion to create a carbon market, with the caveat that international developments will be considered in any move towards cap-and-trade.¹¹⁴⁾ Finally, the research component of developing and refining climate change-related policies is addressed with the command to deepen and enhance the useful output of existing and future research.¹¹⁵⁾ While this chapter of the Act is most commonly discussed in the context of a prospective “carbon market,” it advances a more immediate and relevant set of regulatory parameters related to the limitations that may be imposed upon “controlled entities.”

109) *Id.* art. 30.

110) *Id.* art. 40.

111) *Id.* art. 42.

112) *Id.* art. 44–45.

113) *Id.* art. 46; *see also* art. 28.

114) *Id.* art. 46(3).

115) *Id.* art. 48.

3. *Relationship Between Green Growth and Sustainable Development*

The LCGGFA seeks to give putative meaning to the concept of “sustainable development.” The Act incorporates the definition of “sustainable development” from the Sustainable Development Act¹¹⁶⁾: “development based on sustainability¹¹⁷⁾ that is implemented simultaneously in the pursuit of economic growth, social stability and integration, and the preservation of the environment.”¹¹⁸⁾

As the law which succeeded and directly amended the Sustainable Development Act, the LCGGFA contains numerous provisions related to sustainable development. The LCGGFA states that sustainable development is heavily related to altering patterns of resource consumption and mitigating carbon emissions. The President is charged with preparing measures to address land management and efficient development, such as “carbon-neutral” and resource self-sufficient cities and “environment-friendly” development.¹¹⁹⁾ The executive branch is further charged with overseeing water management¹²⁰⁾ and the transportation network¹²¹⁾ in a manner that both mitigates and adapts¹²²⁾ to climate change consequences. The President lies at the center of policy-making for design and efficiency standards to promote “green buildings”¹²³⁾ and is given the broad instruction to promote environment and energy-sustainable production and consumption choices by ensuring that the energy and emissions consequences of the provision of goods and services are “reasonably linked

116) Act No. 8612, Aug. 3, 2007.

117) This definition is facially tautological, so I try to identify below the substantive content of sustainable development as it is applied in Korean law.

118) *Id.* art. 2(2).

119) LCCGFA, art. 51(2).

120) *Id.* art. 52.

121) *Id.* art. 53.

122) Considering the social dimension of sustainable development theory, adaptation takes on special significance, especially if one assumes that the most economically and socially vulnerable individuals would generally bear the heaviest burden of climate change impacts in the absence of effective anticipation and adaptation.

123) *Id.* art. 54.

to and reflected in the price of goods and services.”¹²⁴⁾ The executive is charged with promotion of carbon sinks domestically through a variety of channels, including regulation of land use (forests, farmland), agriculture, and territorial sea waters.¹²⁵⁾ The discretion to provide developing countries with climate change-related “financial support”¹²⁶⁾ may have considerable application in the area of carbon sinks, such as afforestation and reforestation projects in the tropical regions of Southeast Asia.

At the most aspirational level, the LCGGFA asserts to fulfill the basic premise of sustainable development: building a foundation for policy-making that reflects a full consideration and accommodation of environmental, economic, and social justice considerations. The provisions of the Act purport to enact a version of sustainable development by framing the context in which Korean development occurs and, ultimately, the physical and social environment in which individual Koreans live.¹²⁷⁾ These provisions have an evident balance of environmental and economic policy: they capture the intersections of environmental conservation¹²⁸⁾ and harm reduction¹²⁹⁾ with intermediate- and long-term economic planning.

As Korean economists argue, sustaining and broadening the current base of Korean prosperity requires the utilization of emerging technology markets and a new transformation of the Korean economy.¹³⁰⁾ These provisions provide a template for the balancing and mutual satisfaction of environmental and economic objectives.¹³¹⁾ Sustainable development

124) *Id.* art. 57(2).

125) *Id.* art. 55.

126) *Id.* art. 61.

127) *See generally id.* art. 36 (stating that the government “shall endeavor to reduce social and economic expenses by inducing persons who cause the generation of GHG emissions or pollutants to voluntarily reduce the generation of GHG emissions and pollutants”); art. 7 (stating individual duties to “practice green life” and “increase consumption and use of green products”).

128) The Act contains, for instance, provisions on the promotion of “eco-tourism” through preservation and restoration of ecosystems. *Id.* art. 56.

129) In example, consider provisions related to reduced energy consumption and lowered carbon emissions, ranging from design standards to a prospective cap-and-trade system for carbon emissions. *Id.* art. 42–47.

130) *See* Jisoon Lee, *supra* note 12, at 24–31.

131) As discussed *supra*, sustainability has been an embedded component of international

implies not just a dimension of conservation and custodianship, but also modification and adaptation. While sustainability contains a principle of maintaining certain conditions, minimum quantities or “critical masses” of natural resources,¹³²⁾ development is predicated upon change and conversion.¹³³⁾ Green growth seeks to give specific content and meaning to the general parameters of sustainable development, including through adaptation to changing environmental conditions.

4. *Opportunities and Obstacles*

The very features of the LCGGFA that define its potential for significant reform and legal, political, social and economic impact also underpin serious objections to the legislation itself. These features include its comprehensive scope, specific identification of policy goals and the areas of administrative and regulatory law that should be engaged to achieve them, and the central role of the Korean President, and by extension the executive power in general, in not just executing the legislation, but interpreting it. That its policy ramifications remain to be defined is arguably the central strength and also the greatest concern uncertainty surrounding the Act. I first elaborate upon the potentials for socially meaningful impact created by these features, before discussing the related objections that these features raise.

The LCGGFA presents a comprehensive framework that connects administratively disparate dimensions of bureaucratic function in the service of the unified policy objectives of the Act. The LCGGFA identifies a

environmental law rhetoric for more than two decades. The ubiquity and generality of sustainable development reinforce the reality that it must be supplemented or, as the Act purports to do, integrated into an elaborated vision for policy implementations. Therefore, the objection that Korean green growth is inadequate on an international stage due to the established position of sustainable development is unavailing.

132) For discussions of maintenance of natural capital, see M. Roseland, *Sustainable Community Development: Integrating Environmental, Economic, and Social Objectives*, 54 *PROGRESS IN PLANNING* 73, 78 (2000); D. Pearce and R. K. Turner, *ECONOMICS OF NATURAL RESOURCES AND THE ENVIRONMENT*. 44 (1990).

133) See Kohn et al., *SUSTAINABILITY IN ACTION: SECTORAL AND REGIONAL CASE STUDIES*, 3 (2001) (considering the theoretical and practical challenges of maintaining particular features or quantities of elements within dynamic environmental systems through time).

number of specific areas for targeted reforms and implementations; aforementioned examples include tax reform, maintenance of carbon sinks, and expanded international cooperation. Further, the legislation discusses a set of potential incentives that can be created to stimulate strategic and creative measures by private parties to advance economically and environmentally sound outcomes. The Act endorses several layers of quantity-related instruments, both through its entity regulation and, to more fully engage market logic, a potential cap-and-trade system. The choice of quantity over price instruments may displease those who prefer the price-based strategy of a carbon tax, but quantity instruments hold significant promise, especially in the eventual design of internationally cooperative approaches to emission mitigation.¹³⁴⁾ The considerable power and discretion vested in the executive can potentially provide the basis for efficient implementation and enforcement of specific green growth policies.

The very characteristics that give rise to the potential robustness and impact of the LCGGFA are also the source of some of the most serious criticisms against it. The Act may be seen as too specific and complex, effectively trying to legislate solutions to specific contemporary problems for implementation in a dynamic future environment for which currently conceived policy mixes may be unproductive.¹³⁵⁾ Paradoxically, however, the very generality with which many of the Act's provisions are framed poses the arguable problem that the legislation lacks a definitive vision for how to advance its stated purposes. Inasmuch as its legal obligations are largely aspirational, the question of enforcement remains indeterminate.¹³⁶⁾

Another general critique focuses on the degree of executive discretion, ultimately residing with the President, existing under the structures and

134) See Wiener, *supra* note 23.

135) Complexity theory suggests that while specific causal interactions may be impossible to predict, the trends and character of such interactions are not, and that as applied to the administrative state, the theory counsels against highly "complex" and context-specific regulation. See generally J.B. Ruhl and Harold J. Ruhl, Jr., *The Arrow of the Law In Modern Administrative States: Using Complexity Theory to Reveal the Diminishing Returns and Increasing Risks the Burgeoning of Law Poses to Society*, 30 U.C. DAVIS L. REV. 405 (1997).

136) For example, the LCGGFA states obligations for individual citizens to promote green growth principles, such as practicing "green life" and preferring the consumption of "green products." LCGGFA, art. 7(1), (2).

procedures created by the LCGGFA. The Act endorses a balance of power heavily delegated to the executive. Although this Act may make policy design and implementation adaptable through time, it embraces internal responsiveness and flexibility at the potential expense of broader connection and responsiveness to popular preference. Serious questions exist about how, if at all, specific green growth policy initiatives are connected to and legitimated by informed public support. Arguably, the earliest major illustration of green growth policy was implemented through a lengthy and expensive process that was and remains insensitive to public opinion. During his presidential campaign in 2007, current president Lee Myung-Bak advocated the creation of a “Pan Korea Grand Waterway” by connecting the Han and Nakdong rivers via a canal.¹³⁷⁾ Following considerable scholarly and public opposition, the canal proposal was abandoned. A new plan to modify an extensive network of Korean waterways based around four principal rivers, the Han, Nakdong, Geum, and Yeongsan, was advanced as a specific green growth-related initiative prior to the promulgation of the LCGGFA. The “Four Rivers Project” required an initial 22 trillion won allocation (the equivalent of more than 19 billion USD) for its completion. Amongst other measures, the legislation calls for building 16 dams, deepening riverbeds through extensive dredging of more than 500 million cubic meters of sand and other riverbed material, and constructing a series of recreational accommodations along the waterways.¹³⁸⁾

The Four Rivers Project received early if qualified praise from some international bodies;¹³⁹⁾ the United Nations Environmental Programme (“UNEP”) referenced it in relation to important environment and economic activity-adaptation goals.¹⁴⁰⁾ However, to what extent the Four Rivers

137) See John Sudworth, *Canal plan divides Korea*, BBC NEWS, Jan. 23, 2008, available at <http://news.bbc.co.uk/2/hi/asia-pacific/7202161.stm>.

138) See Normille, *supra* note 85, at 1568-70.

139) See Do Je-hae, *Foreign NGOs Brings 4-Rivers Plan Positive Spin*, KOREA TIMES, Feb. 9, 2010, available at http://www.koreatimes.co.kr/www/news/nation/2010/02/113_60590.html.

140) With reference to the Four Rivers Project, UNEP observed, “UNEP encourages the stepping up of investment in ecological restoration, to address this key ecological scarcity as well as to prepare effective and cheap adaptation strategies for the onset of climate change

Project would actually advance socially desired and desirable objectives, and with what collateral consequences, have been central questions of political and social debate.¹⁴¹⁾ About 70% of the public have expressed the view that the Four Rivers Project should be canceled or at least suspended.¹⁴²⁾ Although this project has fueled a spirited debate within civil society,¹⁴³⁾ disputes and public resistance have not impeded the pace of project implementation.¹⁴⁴⁾ The Four Rivers Project is scheduled to be principally concluded in September of 2011,¹⁴⁵⁾ in the face of continuing opposition and criticism, President Lee is confident that the public will come to favor the Four Rivers Project after seeing the results.¹⁴⁶⁾

Such attitudes, and the general Korean experience with the Four Rivers Project, cast doubt on Korean policy as “socially sustainable.” Consistency

reducing recurrent costs associated with periodic flooding.” United Nations Environment Programme, OVERVIEW OF THE REPUBLIC OF KOREA’S NATIONAL STRATEGY FOR GREEN GROWTH 7 (2010), available at http://hqweb.unep.org/PDF/PressReleases/201004_UNEP_NATIONAL_STRATEGY.pdf.

141) See Normille, *supra* note 85, at 1568–1570.

142) See Do Je-hae, *supra* note 139.

143) For instance, approximately 2,800 Korean scholars loosely organized in opposition to the canal project in the so-called Professors’ Organization for Movement Against Grand Korean Canal (“POMAC”) and expressed criticism of the Four Rivers Project. See Normille, *supra* note 85. In another example, the Catholic Bishops’ Conference of Korea issued statements criticizing the environmental impact and rapid implementation method of the Four Rivers Project, engaging a prominent dimension of Korean civic life, its organization through religious communities and hierarchies, in the social debate. See *Catholic Bishops’ Conference of Korea announces opposition to Four Rivers project*, THE HANKYOREH, Mar. 13, 2010, available at http://www.hani.co.kr/arti/english_edition/e_national/409868.html. While much domestic sentiment has resisted the Four Rivers Project, not all civil society involvement has been oriented towards opposition to the project, especially abroad. See Do Je-hae, *supra* note 139.

144) Construction has also continued in the face of considerable political debate and conflict with local government officials. See *South Korea’s Four Rivers project: The dredger must go on*, ECONOMIST, Aug. 9, 2010, available at http://www.economist.com/blogs/banyan/2010/08/south_koreas_four_rivers_project.

145) See *Lee confident of river project’s success despite backlash*, YONHAP NEWS, Apr. 16, 2011, available at <http://english.yonhapnews.co.kr/national/2011/04/16/94/0301000000AEN20110416003800315F.HTML>.

146) According to President Lee, “All [of the people] will accept [the project] if [they] see the scene after [the construction] is completed ... There can be opposition to new things. But if [the government] does not carry out what it should do due to opposition, a country can’t develop.” *Id.*

of legislative promulgations and executive actions with the expressed views of the public is an essential dimension of sustainability policy in a society based on democratic consensus. This is particularly the case for issues, such as the Four Rivers Project, which occupy a central place in public discourse and where the informed opinions of the electorate are clearly discernible. The supporters of the Four Rivers Project argue that this and other green growth policies will ultimately be accepted by the Korean people, even if this acceptance comes only after the fact. If public opinion does not change, however, one implication could be a loss of support for future policies advanced under the rubric of green growth, resistance undergirded by suspicion of the process by which initiatives such as the Four Rivers Project have been implemented thus far.

It is premature to predict whether the positive or negative view of the central characteristics of the Act is the more incisive and prescient analysis of its implications for Korean law and policy. These variables should be carefully monitored, and the potential vulnerabilities of resultant laws and regulations carefully managed and mitigated, in order to promote the most efficient and socially sustainable results for Korean green growth.

IV. Green Growth and Transplantation

Green growth may be usefully introduced in other domestic systems or “internationalized” through multinational legal structures for two possible reasons. The first is that the insights found in green growth, in theory or as applied, would arguably be of benefit to other nations. The second possibility is that particular other countries may find it in their national interest to facilitate a particular relationship and “legal linkage” with Korea or other nations espousing and implementing green growth-related policies. The following analysis considers both of these possibilities through the general consideration of potential transplantation of Korean green growth abroad.

1. What is Transplantation?

The concept of “legal transplantation” as a means of analyzing changes

in legal systems was popularized by Professor Alan Watson,¹⁴⁷⁾ but the concept and analysis of its descriptive and analytical power date back further.¹⁴⁸⁾ Transplantation may be defined generally as the borrowings that happen between and amongst legal systems, ranging from the adoption of an entire legal system to the excerpted borrowings of particular laws and policies.¹⁴⁹⁾ Transplantation is of particularly vital importance in environmental legislation.¹⁵⁰⁾ Because of the global nature of environmental problems and the reality that solutions must engage vital participations from many nations,¹⁵¹⁾ environment and international development are particularly well-suited to the harmonized benefits that deliberate and organized transplantation can accomplish.¹⁵²⁾

The LCGGFA has several key features that could prove useful to the development of analogous legal frameworks in other nations. In general, the LCGGFA embraces and promotes incentive-based policy instruments, leaving considerable discretion and flexibility to regulated entities to pursue their best interests, but contextualizing their choices in a regulatory environment that rewards the efficient and incremental improvement of optimizing public goods and, even more evidently, minimizing public harms (especially when GHG emissions are viewed as “public harms”). In the continuous debate regarding the degree of domestic flexibility in achieving objectives,¹⁵³⁾ the LCGGFA offers a particularized version of how

147) Alan Watson, *LEGAL TRANSPLANTS: AN APPROACH TO COMPARATIVE LAW*, University of Georgia Press (1st ed. 1974).

148) According to the distinguished scholar and Harvard Law School Dean, Roscoe Pound, as quoted almost 100 years ago, the “history of a system of law is largely a history of borrowings of legal materials from other legal systems and of assimilation of materials from outside the law.” Jonathan B. Wiener, *Something Borrowed for Something Blue: legal Transplants and the Evolution of Global Environmental Law*, *ECOLOGY L.Q.* 1295, 1296 (2001).

149) See Alan Watson, *supra* note 147.

150) See generally Wiener, *supra* note 148.

151) See Wiener, *supra* note 23.

152) See, e.g., Benedict Kingsbury et al., *The Emergence of Global Administrative Law: Foreword: Global Governance as Administration – National and Transnational Approaches to Global Administrative Law*, 68 *LAW & CONTEMP. PROB.* 1 (2005).

153) The negotiation of the Kyoto Protocol, for instance, was fraught with conflict on this point, with the United States (and, to a less emphatic extent, Japan) arguing for maximum domestic flexibility in emissions-relevant domestic lawmaking, and with the EU advocating more structure and particularized commitments within the agreement itself. See Schroeder,

domestic lawmaking can produce a diverse bundle of policy initiatives. The green growth model, embodying the notion of flexibility in elaborated statutory structure, may serve as a useful if general template for other nations. The Act is ambitious in its broad scope of applicability, incorporating many departments and functions of the existing bureaucratic order while re-imagining the very relationship between administrative departments, and between the state and the individual.¹⁵⁴ Although the dramatic sweep of such provisions as obligations for individual citizens may hardly be generalizable, and should be the source of considerable debate about personal freedom of action and construction of individual choice environments by the government, the fundamental issues raised by the LCGGFA are questions that other societies should consider in their public policy discourse. Finally, and more concretely, provisions providing for carbon credits for Korean entities achieving foreign-based carbon emissions reductions,¹⁵⁵ prospectively within the context of a nationwide or multinational cap-and-trade system, represent a move in the direction of quantity-based market regulation of carbon emissions. Quantity-based market instruments have been utilized in only a fragmented manner thus far, but lie at the center of anticipated future developments for efficient and globally integrated carbon management.

Can the Korean green growth legal framework be usefully transplanted, in whole or in part, to the domestic legal systems of other nations? The distinctive aspects analyzed *supra* are relevant to answer this question. The Korean approach is particularly well-suited to a nation with a preference and capacity for policies that encompass a broad set of environmental goals, including but not limited to the mitigation of GHG emissions. The framework approach is appropriate for nations that have the political and social capacity to proceed with green growth policies on an initially domestic scale, with potential bilateral and multilateral projects in the

supra note 28, at 31-32.

154) See, e.g., LCGGFA, art. 7.

155) Examples of projects include alternative energy, such as biomass/biogas, wind, and hydropower; energy efficiency initiatives; and carbon sequestration and the optimization of carbon sinks. The potential to achieve these forms of resource consumption efficiency abroad represent the most instantly relevant application of the LCGGFA for other nations, especially developing nations with whom Korea could cultivate mutually beneficial partnerships.

future. Nations insisting upon broad international consensus and commitment as a condition precedent to adopting “green” policies may not benefit from the Korean approach. Further, developing nations may find Korean green growth more suitable and attractive than developed nations. For developing nations, green growth legislation holds the particular potential of enabling cooperation with Korea and Korean entities, such as CDM or similar multinational joint efforts. For developed nations, the appeal of cooperation with Korea is less evident, and Korean-style green growth legislation may be redundant with many currently implemented policies.

Particular similarities that would promote transplantability include: a strong central policymaker (similar to the President) who can utilize the general framework and coordinate the efforts of regulatory bodies to enact concrete green growth-related policies; an openly acknowledged national goal to enhance stature in the international community; and a desire to facilitate cooperation with other nations implementing similar legislation, including (but not limited to) Korea.

In predicting the potential for the Act and its subsequent elaboration in further Korean law and policy to impact the legal frameworks adopted and implemented in other nations, one central and readily transplantable idea is the direct inclusion of mechanisms for linkage with domestic laws of other nations, and with international market mechanisms.¹⁵⁶⁾ Some of the other general principles may also find a relatively broad audience. Of particular note are the heavy emphasis on incentive-based instruments¹⁵⁷⁾ and the cultivation of broad and inclusive incentive structures that create a decision-making environment for entities and individuals that rewards choices seen as reinforcing specific green growth objectives. Actual

156) For a discussion of the potential of the LCGGFA to establish linkages with international market mechanisms, see Jae-Hyup Lee, *Noksaekseongjanggibonbeopui Chinhwangyeongjeok Silhyeonul Yuhan Beopjeok Sudan – Gihubyeonhwadaeung Sijangjeok Mechanismeul Jungsimeuro* [Legal Measures to Fulfill Eco-friendly Implementation of the Proposed Basic Law on Green Growth: Market Mechanisms for Responding to Climate Change], 31 HWANGYEONGBEOPYEONGU 1 [ENVTL. L. STUD] 39, 61 (2009).

157) For an analysis of the benefit and importance of market-based mechanisms and an argument of their expansion in environmental regulation, see Chun Jaekyong, *Hwangyeonggyuje Paradigmui Jaepyeon* [Paradigm Shift of Environmental Regulation] 32 HWANGYEONGBEOPYEONGU 1 [ENVTL. L. STUD] 81, 106 (2010).

“transplantation” of substantial portions of the framework may be of more regional influence, but could become a beneficial reality in Southeast Asian nations well-situated to benefit from partnership with Korea to utilize cost-effective emission reductions in the context of environmentally sound economic growth.

2. “Green Growth Partnerships” and Certified Emission Reductions (“CERs”)

Korean green growth contemplates bilateral and multilateral cooperation and potential regional partnership opportunities,¹⁵⁸⁾ but is fundamentally based on domestic and potentially immediate initiatives. Of particular promise is the incentivization of private parties to engage their expertise in designing particular carbon credit-generating projects. Whether through an eventual cap-and-trade marketplace, or, as is more likely in the immediate future, as a component of the existing regulation of controlled emitting entities, the Korean green growth framework has the flexibility to incorporate emission-reduction projects abroad. To pursue the lowest-marginal-cost mitigations, projects limiting emissions in developing countries, analogous to CDM projects under the Kyoto Protocol as a joint venture between developed and developing nations, have particular promise.

1) Opportunities for Forestry-Related Cooperation

Given the dramatic rate at which deforestation is happening worldwide, especially in the tropical regions where rainforests sequester the highest densities of carbon, programs that succeed in reducing the rate of deforestation, and achieve lasting preservation of carbon-rich forests through time, represent a potentially significant dimension of a carbon emission reduction strategy. Reducing deforestation rates by half of their present levels by 2050 and preserving the stock of forests for the following 50 years would account for 12% of the amount of emission reductions necessary to satisfy the goal of a stable 450 parts per million of carbon

158) LCGGFA, art. 61.

dioxide in the atmosphere¹⁵⁹⁾ by 2100. In other words, the admittedly ambitious goal of implementing a worldwide biphasic forest preservation strategy (significant deforestation reduction through 2050, stable volume of forest from 2050 through 2100) could account for approximately one-eighth of the net mitigation efforts required to contain the approximate net climate impact of approximately a 2 degrees Celsius increase in average temperatures.¹⁶⁰⁾

Forestry-related mitigation efforts contain two primary prongs, representing the bilateral exchange of benefits that can be understood to be the underlying bargain of international deforestation mitigation efforts. The developing, forested “host” country facilitates, in conjunction with third parties, the study necessary to gauge carbon stocks and subsequent monitoring of forest conditions. The host nation would further provide the legal promulgations necessary to create formal protection of forests, in a manner which provides protection of discrete tracts and also credibly allays concerns about “leakage.”¹⁶¹⁾ Critically, the host nation also provides consistent enforcement of the relevant environmental protection laws to demonstrate that theorized carbon emission mitigation is realized at the implementation phase of the project.

In exchange, the partner parties, either private enterprises, international organizations, or foreign governments themselves, would provide the material compensation that forms the essential consideration of the forest protection agreement. While the simplest form of such compensation would amount to direct financial compensation, alternative approaches would structure this dimension of the benefit exchange in a manner that promotes the durability of forest protection through time, and underscores

159) 450 parts per million of CO₂ is a commonly stated stable figure projected to mitigate the net warming effect of GHG emissions through time. Based upon IPCC projections as well as studies conducted by other researchers, stabilization at 450 parts per million would, at a 90% confidence interval, produce net temperatures between 1.3 and 3 degrees Celsius higher than global temperatures prior to the industrial revolution. *See, e.g.,* Marshall Wise at al., *Implications of Limiting CO₂ Concentrations for Land Use and Energy*, 324 *SCI.* 1183, 1183 (2009); Nicholas Stern, *What is the Economics of Climate Change?*, 7 *WORLD ECON.* 1, 2 (2006).

160) Stern, *supra* note 159, at 2.

161) This concern focuses on the possibility of displaced deforestation activities within the nation that offset the purportedly “additional” carbon sequestration achieved through the initial protection.

the sustainability of the arrangement. In particular, transfer of technologies that could facilitate conservation-consistent economic development would be a valuable and durable contribution. The benefits of such transfers would ideally help to foster self-sufficiency and alternative livelihoods for individuals otherwise economically dependent upon exhaustive exploitation of forest resources.¹⁶²⁾

Depletion of forest resources is in no society's long-term interest, and the implications of deforestation are more direct and invasive for rainforest countries in particular, who suffer not just the marginal consequences of emission-related climate change, but also the exhaustion of resources with few evident substitutes for economic invigoration. By building such alternative bases for "environmentally friendly" economic development, with real benefits for employment and distributive justice within the society, into the emission-mitigation project, the parties meaningfully advance the notion that the forest protection project can be both economically and socially sustainable.

2) Policy Objectives for International Cooperation and Sustainable Development

The LCGGFA facilitates prospective cooperation on forestry-related projects. The discretion to provide developing countries with climate change-related "financial support"¹⁶³⁾ may have considerable application in the area of carbon sinks, such as afforestation and reforestation projects in the tropical regions of Southeast Asia. The LCGGFA specifically identifies forest carbon sinks as target area of environmental preservation (and carbon mitigation) strategy, acknowledging that the logic of carbon credit generation is not incompatible with the facts and social dynamics of afforestation projects.

International cooperation between Korean entities and parties in other nations for the achievement of emissions reductions must account for the

162) This consideration relates to a significant human rights issue for developed nation participants in credit-generating programs: the terms of cooperation must induce developing governments to participate, but should also accrue to the benefit of the individuals in that developing nation, especially those individuals who might be materially adversely affected by the implementation of the program.

163) *Id.* art. 61.

challenges and critiques that have already plagued CDM initiatives under the Kyoto Protocol: the accusation that such projects do not advance an underlying sustainable development objective; concerns about leakage; verifiable and convincing demonstrations of additionality; uneven geographic distribution of projects and benefits; and problematic distribution of benefits within the developing nation and the communities impacted by each project.¹⁶⁴⁾ These are all serious challenges, and their particular relevance in forest-related contexts demonstrates why an otherwise highly economical and attractive means of carbon emission mitigation has not yet emerged as a central dimension of international environmental policy.¹⁶⁵⁾

As a general matter, to establish the credibility necessary to facilitate international investment, forest conservation-minded states should focus on demonstrating how sustainability will be satisfied within the context of a developing and, in many cases, raw material-consumption driven economy. Such a nation must make the credible case that land use patterns can change, in a meaningful and “net” sense nationwide, in a manner which can be maintained through time. To provide a compelling case for environmental protection (and carbon sink preservation) sustainability, such developing nation governments must account for the economic and social sustainability dimensions of their policies.

V. Conclusion

As a cautionary note for generalizing the benefits of green growth, some Korean theorists conceive of green growth as just the latest essential revolution in the Korean economy.¹⁶⁶⁾ Citing a post-Korean War economy that was founded upon cost-advantageous and low-skill manufacturing,

164) See Schroeder, *supra* note 28, at 34–36.

165) As discussed *supra*, the CDM under the Kyoto Protocol did not allow for forestry-related emission credit-generating projects, based in large part on concerns about evidence of additionality and monitoring and credible political demonstrations necessary to address leakage concerns, in the present and through time.

166) See Jisoon Lee, *supra* note 12, at 43–48.

then transformed into a knowledge-based, high-skill manufacturing economy, these economists see “green economy” as the tool to Korea’s continued growth and economic ascension.¹⁶⁷⁾ The very basis of this notion is not that “a rising tide lifts all boats,” but rather that Korea can once more utilize available opportunities to achieve a comparative advantage.

Domestic legal action to promote environmentally conscious development and mitigate GHG emissions represent first steps in the direction of broader responses to anthropogenic impact on climate and other features of the natural world, and may have positive effects in catalyzing action in other nations or on the international level. However, just as the harms of GHG emissions and other human activities are not distributed equally, the diverse benefits of mitigation and adaptation policies will not be evenly shared. Rivalry for differentiated collateral benefits of protection of our shared atmosphere remains at the center of any multinational economic policy response to climate change.

A fundamental tension, not just in transplantability of particular legislation but in international cooperation in “green growth” in general, is the extent to which green growth benefits may be at least partially exclusive and subject to strategic acquisition and utilization by specific nations. Can the prospective parties to a forestry-related investment project, such as Korea or Korean private entities on one hand and a rainforest-dense country on the other, develop a framework for achieving lasting mutual benefit through meaningful carbon sequestration? Another important question is whether green growth provides a strong basis for facilitating economic development in countries that are currently developing. Having passed through resource-intensive “dirty” phases of development, Korea now apprehends an opportunity for harnessing “clean” development. Can countries that have not attained such development benefit from part or the entirety of this legal framework? These are theoretical but also, in significant part, empirical questions, and they lie at the center of any future progress on bilateral or multilateral forest conservation efforts.

I conclude with an observation about the unique status and Korean domestic significance of prospective transplantation of green growth-

167) *Id.*

related law to other legal systems. The perspective that the LCGGFA may provide source material for other nations in the drafting of domestic law, and potentially also inform the design of dimensions of international law, would mark a dramatic inflection point in Korean legal history. Korea has, for more than a century, been the recipient of many transplantations of law.¹⁶⁸⁾ Korea's foundational codes, the Civil Code and the Criminal Code, were introduced during the Japanese occupation (Japan, in turn, had borrowed them from Germany and France).¹⁶⁹⁾ Other examples of imported law are numerous; the Korean Copyright Act represents just one specific illustration.¹⁷⁰⁾ While the post-World War II era has seen many innovations by Korean lawmakers, the trajectory of Korea-related borrowing remains in the direction of Korea as the recipient of foreign-made law. The significant international interest in the LCGGFA suggests that, in this area of policy, Korea may become, arguably for the first time, a source nation for legal transplantation.

As discussed by Watson, a major basis for historical transplantations is the status of a particular source of law or legal jurisdiction as an established innovator of legal structures that are relatively widely adopted by recipients.¹⁷¹⁾ Korea does not reside in a position of historical influence for exportation of its legal philosophies and administrative structures. Korean law stands to gain recognition in the international community only on the basis of its merit and innovativeness. The utilization by other nations of aspects or excerpts of the LCGGFA would be rooted squarely in the appraisal of the law (or the borrowed portion thereof) as efficacious and importable policy. Such an outcome would serve a central goal of the Act itself: to effectuate a subtle but critical shift in status as Korea more fully

168) Seth, *supra* note 11, at 43 (2010) (describing Japanese colonial rule of Korea). The Japanese codes, in turn, were based on the civil law codes of continental European nations, especially Germany and France. Ginsburg, *supra* note 11, at 2-3.

169) *Id.* See also Walter Wallace McLaren, A POLITICAL HISTORY OF JAPAN DURING THE MEIJI ERA: 1867-1912 (Cass 1965) (1916).

170) See SOO-KIL CHANG ET AL., INTELLECTUAL PROPERTY LAW IN KOREA 121 (Christopher Heath ed., 2003); see also John Leitner, A Legal and Cultural Comparison of File-Sharing Disputes in Japan and the Republic of Korea and Implications for Future Cyber-Regulation, 22 COLUM. J. ASIAN L. 1, 8-10 (2008).

171) See Watson, *supra* note 147.

seeks to join the company of nations that not just assume obligations, but also offer constructive solutions to central global challenges.

KEY WORDS: Climate Change, Green Growth, Sustainable Development, Forestry, REDD, Legal Transplantation, Carbon Credits, CER, CDM

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