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KOFI OTENG KUFUOR*

New Institutional Economics and the Failure of Sustainable Forestry in Ghana

ABSTRACT

This article explores reasons for the failure of sustainable forestry in Ghana. Its contribution to the debate examines the problem of increased timber logging from an institutionalist point of view. Drawing on New Institutional Economics methodologies, the article sets out hitherto unexamined rationales for the failure to reverse deforestation in Ghana. The focus is on key actors and institutions in the timber market and the state bureaucracy. The article challenges the assumption that legislation on sustainable forestry is motivated solely by the public interest. The article concludes by suggesting a raft of approaches to dealing with deforestation in Ghana.

INTRODUCTION

Deforestation in Ghana has resulted in the reduction in total forest cover from 8.2 million hectares at the turn of the twentieth century to 1.6 million hectares in 2003.¹ The majority of Ghanaians rely on forests for cooking and firewood;² thus, deforestation threatens their livelihoods. Also, timber is Ghana's third most important export and, thus, depleted forests have serious implications for national economic development.³

Amidst concern for environmental conservation and management, the Ghanaian Parliament passed the Timber Resources

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1. George Kyei Frimpong, *Ghana Likely to Lose Forest Cover Under 20 Years*, GHANAIAN CHRON., Aug. 26, 2003, available at <http://www.ghanaweb.com/GhanaHomePage/NewsArchive/artikel.php?ID=41906> (last visited Aug. 28, 2004).

2. AMERICAN UNIVERSITY, TRADE AND ENVIRONMENT DATABASE CASE STUDIES—GHANA FOREST LOSS § A.2.c, available at <http://www.american.edu/TED/ghana.htm> (last visited Aug. 28, 2004).

3. *Id.* § A.2.

Management Act (TRMA) in 1997⁴ as one of several measures designed to reverse deforestation.⁵ Despite this legislation, deforestation continues to be a major problem in Ghana. Ostensibly public interest legislation, the TRMA was designed to conserve forests by regulating and excluding the timber operations of certain economic actors, who were allegedly responsible for rapid forest loss. Under the TRMA, timber operators can only harvest trees if they follow these new regulations. Yet, the TRMA has been ineffective and deforestation is still a serious problem.

How do we explain the failure of the TRMA to combat deforestation? In the opinion of Ghanaian policy makers, the failure is due to the continuing illegal and unsustainable practices of the chainsaw operators⁶ and the inability of government departments to enforce the TRMA.⁷ Government officials have consistently argued that chainsaw operators continue to break the law by felling trees and converting them to lumber.⁸ However, I argue that this interpretation is too simplistic. This article uses New Institutional Economics (NIE) methodologies to suggest an alternate explanation, to gain more insight, and hopefully to solve the problem of deforestation in Ghana.

Using NIE methodologies, this article suggests that policy makers must recognize that the timber millers were a major force behind the TRMA. Beneath the TRMA's "public interest" veneer was an alliance of interests—a coalition between rent-seeking timber millers and national environmental bureaucrats. Although environmental concerns were voiced during the adoption of the TRMA, its real motivation was the protection of entrenched private interests. The TRMA succeeded in protecting those private interests but failed to protect the public interest in reducing deforestation. Because NIE excels at illuminating how private interests affect policy, this article uses NIE to examine the

4. Timber Management Resources Act, 1997 (Act 547) (Ghana) [hereinafter TMRA]. For a discussion of the Act, see Kofi Oteng Kufuor, *Forest Management in Ghana: Towards a Sustainable Approach*, 44 J. AFR. L. 52 (2000).

5. For an argument that deforestation in Ghana is grossly exaggerated, see JAMES FAIRHEAD & MELISSA LEACH, *REFRAMING DEFORESTATION: GLOBAL ANALYSES AND LOCAL REALITIES: STUDIES IN WEST AFRICA* ch. 4 (1998).

6. For recent allegations that chainsaw operators are responsible for rapid deforestation, see Samuel Owusu-Ansah, *Illegal Chain Sawn Lumber Accounts for More Than Half*, ONLINE INDEP., Jan. 8, 2004, available at <http://www.independent-gh.com/story.asp?id=658> (last visited Aug. 28, 2004).

7. See Simmons Yussif Kewura, *FSD Accuses Police Over Illegal Forest Operations*, GHANAIAN CHRON., June 25, 2003 (noting collusion between police units and chain saw operators); Illegal Logging.info, *Illegal Logging in Ghana's Asubima Forest*, at <http://www.illegal-logging.info/news.php?newsId=112> (last visited Aug. 28, 2004).

8. Owusu-Ansah, *supra* note 6.

TRMA's failure and to suggest alternate policy solutions to the deforestation of Ghana.

The article proceeds as follows: Part I describes the participants in the Ghana timber market and the TRMA's salient provisions. Part II examines the public interest theory of legislation and how it has been used to justify the TRMA. Part II also suggests that public decision makers are motivated by their material interest in a manner akin to private decision makers. The focus here is on approaches to understanding human behaviour that are subsumed under NIE and, in this regard, I rely on rational choice theory, public choice theory, and rent seeking.

Part III analyzes how the Ghanaian sawn lumber market worked before entry by the chainsaw operators and shows how the timber millers were the main beneficiaries of this arrangement. Part III also explains how the chainsaw operators upset the contractual relations that bound market participants together. My hypothesis in part III is that unrestrained chainsaw operators ruptured existing contractual relations within the market for sawn lumber. That rupture led to pressure by the timber millers for the regulation of the chainsaw operators and their later expulsion from the sawn lumber market altogether. In part III, I also analyse how the activities of chainsaw operators threatened the interests of public sector decision makers, thus prompting the latter to forge a rent-seeking alliance with the timber millers.

Part IV, suggests institutional and legislative changes that can help tackle deforestation in Ghana. Part V concludes the paper.

I. THE PARTICIPANTS IN THE GHANA SAWN LUMBER MARKET

Before the entry of the chainsaw operators into the timber market, there were three groups of market participants. Logging firms were responsible for primary production, *i.e.*, felling trees. Timber millers carried out secondary production, *e.g.*, sawmilling, plymilling, and veneer milling. Furniture workers performed tertiary production, *e.g.*, manufacturing furniture parts, doors, and windows. Some firms had achieved full vertical integration; others had integrated the secondary and tertiary sectors.⁹ In addition to these market participants, the Ghana Timber Association, the Ghana Timber Millers Organization, and the Furniture and Woodworkers Association of Ghana and Small-Scale

9. See FOSUABA A. MENSAB BANAHENE, GHANA'S TIMBER INDUSTRY: PERSPECTIVES OF THE PROCESSING SECTOR 5-6 (1997).

Carpenters Association represent the primary, secondary, and tertiary sectors, respectively.¹⁰

Intra-industry contractual relations favoured the timber millers. The custom in the contractual process was that the loggers were obliged to transport their logs to lumber mills for inspection. Transporting logs to the mills represented an estimated 31.82 percent of variable costs that loggers incurred¹¹ and was the largest portion of the loggers' total costs.¹² The loggers were required to offload their logs while the millers examined the product. In the (invariable) event of a low price being offered by the millers,¹³ the loggers would seem free to on-load the logs and seek a new purchaser.¹⁴ But things were not so simple.

Millers routinely cooperate on prices offered to loggers for their products,¹⁵ giving them market power and making it unlikely that the logger will get a better price elsewhere. Furthermore, while millers allow their cranes to be used for offloading, they do not allow the logger to immediately use the same crane to on-load the logs if the logger wishes to seek a better bargain elsewhere.¹⁶ These practices made it virtually impossible for loggers to seek better prices.

The chainsaw operators disrupted this status quo. Chainsaw operations tend to be very small outfits – usually consisting of only two persons.¹⁷ They cut timber and use chainsaws to saw the logs into lumber. Highly mobile, not subject to the control of the national timber bureaucracy, and capable of evading tax obligations, chainsaw operators have much lower production costs than loggers and millers.¹⁸ These lower costs enabled chainsaw operators to capture profits from the timber millers in several ways.

First, they converted felled logs into lumber, thus competing directly with the millers.¹⁹ Second, they competed for the millers'

10. *Id.*

11. See THORSTEN TREUE, *POLITICS AND ECONOMICS OF TROPICAL HIGH FOREST MANAGEMENT: A CASE STUDY OF GHANA* 102, tbl. 10.2 (2001).

12. *Id.*

13. On the low prices for logs offered by the timber millers, see *Distressed Timber Companies to Receive Permits*, AFRICAST.COM, Aug. 18, 2001, at http://www.africast.com/archive_test.php?showStart=200&strRegion=West (last visited Aug. 28, 2004) (noting the Ghana Timber Association's concern about the low prices offered to them for their timber by the timber millers).

14. Interview with Regional Forestry Officer, Forest Services Division, in Kumasi, Ghana (Sept. 29, 2002).

15. *Id.*

16. *Id.*

17. *Id.*

18. *Id.*

19. *Id.*

suppliers by offering loggers better prices than the millers. Thus, the loggers were increasingly inclined to deal with the chainsaw operators because they could strike a more profitable bargain.²⁰ As a result, the timber millers now faced the distinct probability, through the loss of their market power, of going out of business altogether.²¹ My hypothesis is that it was this threat to the millers' livelihoods that resulted in their lobbying for the TRMA.²² This supposition is tested in part III below.

An Overview of the Timber Resources Management Act

Prior to the TRMA, to harvest timber in Ghana, an application for a timber concession had to be made to the Chief Conservator of Forests and, subject to a recommendation by a District or Regional Forestry Officer, a firm or individual was granted a timber concession.²³ In the view of policy makers, this practice had two consequences: it lacked transparency in the award of concessions and it also resulted in unrestricted logging by timber entrepreneurs who had no incentive to practice sustainable forestry.²⁴ In response, the Ghana Parliament passed the TRMA²⁵ and the Timber Resources Management Regulations²⁶ (the Regulations) to prohibit harvesting timber without a Timber Utilization Contract (TUC).²⁷ It was argued that TUCs "would allow the [timber] contractor sufficient contract duration so as to improve his security of tenure, to provide him with sufficient incentive to plan and execute prescribed operations for efficient resource utilization, thereby

20. *Id.*

21. *Id.* The millers' plight was compounded by the difficulties involved in vertical integration of timber firms. This is largely due to the high costs involved in the start up of time operations. See also BANAHENE, *supra* note 9, at 5-12; TREUE, *supra* note 11.

22. Interview with Regional Forestry Officer, *supra* note 14.

23. 17 Parl. Deb., Ghana (4th Ser.) (16 Dec. 1997) Col. 2062.

24. *Id.*

25. TRMA, *supra* note 4, art. 1.

26. Timber Resources Management Regulations, 1998 (L.I. 1649) (Ghana) [hereinafter TRM Regs.].

27. Timber Utilization Contracts (TUCs) are essentially ecological contracts. Ecological contracts are institutional arrangements designed to regulate relationships between users of a natural resource and parties affected by such use. Ecological contracts are normally drawn up between private parties rather than between the state and the exploiter of a natural resource. As market-oriented environmental instruments, TUCs set out contractual terms between the parties with the aim of producing an environmentally efficient use of natural resources. Geoffrey W.G. Leane, *Environmental Contracts – A Lesson in Democracy from the Japanese*, 25 U. BRIT. COLUM. L. REV. 361, 375 (1991). For further research into ecological contracts, see Eckhard Rehbinder, *Ecological Contracts: Agreements Between Polluters and Local Communities*, in ENVIRONMENTAL LAW AND ECOLOGICAL RESPONSIBILITY: THE CONCEPT AND PRACTICE OF ECOLOGICAL SELF-ORGANIZATION 147-65 (Gunther Teubner et al. eds., 1994).

enhancing the possibility for sustainable management."²⁸ One consequence of the TUCs was that only their holders could enter the forests and harvest timber.²⁹

Under the TRMA, holders of a TUC are also under an obligation to submit proposals on "a reforestation or afforestation³⁰ plan for the establishment and management of forest plantations of at least 10 hectares for each square kilometre of the contract area."³¹ Failure to manage the TUC area in a sustainable manner is ground for its suspension or termination.³² To advance the public interest further, the TRMA also imposes social obligations on the holders of TUCs. Applicants for an award of a TUC are to submit a Social Responsibility Agreement (SRA) to the Timber Rights Evaluation Committee (TREC). An SRA assists inhabitants within the contract area with such amenities as shall be specified in the agreement at a cost of not more than five percent of the annual royalty accruing from the operations of the TUC.³³

In addition, under the TRMA, companies and partnerships³⁴ registered in Ghana can harvest timber³⁵ subject to compliance with procedures of the Forestry Commission³⁶ and the TREC,³⁷ the grant of timber rights by the Minister for Lands and Forestry,³⁸ and ratification by Parliament.³⁹ When granted a TUC, the holder is required to execute a reforestation plan⁴⁰ and to promptly pay rents and royalties.⁴¹

Chainsaw operators and their activities were subject to the terms of the Regulations. Before a chainsaw operator could fell trees, he had to apply to the district assembly⁴² for registration and a licence.⁴³ Chainsaw operators were required to register with the district forest office.⁴⁴

28. Timber Resources Management Bill, 1997 (second reading) (Ghana) 5 (on file with author).

29. See TRMA, *supra* note 4, art. 1.

30. Afforestation is the planting of trees on land that has not borne forests for a period of time, usually decades or centuries. Alexander Mather, *Introduction, in AFFORESTATION POLICIES PLANNING AND PROGRESS 2* (Alexander Mather ed., 1993).

31. TRM Regs., *supra* note 26, pt. II.13(1)(a). A hectare is 100 square metres.

32. TRMA, *supra* note 4, art. 15(1)(a).

33. TRM Regs., *supra* note 26, pt. II.13(1)(a).

34. TRMA, *supra* note 4, art. 2.

35. *Id.*

36. *Id.* art. 3.

37. *Id.* art. 5-6.

38. *Id.* art. 7.

39. *Id.* art. 9.

40. *Id.* art. 8.

41. *Id.*

42. District assemblies are units of local government in Ghana.

43. TRM Regs., *supra* note 26, pt. VI.28(1).

44. *Id.* pt. VI.29(1).

Chainsaw operators were expressly forbidden to convert felled trees into lumber for sale.⁴⁵

The reasoning offered for TRMA was to protect the environment and to curtail deforestation. Since the law was so ineffective, it is reasonable to question the rationale supporting the law and to seek more fundamental explanations for its failure.

II. THE PUBLIC INTEREST, PRIVATE INTERESTS, AND THE TRMA

Perspectives on the regulation of industry by the state differ between those who see legislation and regulation as being in the public interest and those who argue that legislation and regulation tend to benefit well-organized private interests.⁴⁶

Explaining TRMA under Public Interest Theory

The essence of public interest theory is that legislation and administrative action are the consequence of decisions by public officials who have overall social welfare at heart.⁴⁷ Public officials are the best persons to execute public-interest policies because, given their experience with the public policy process, they have the cognitive ability to ascertain what decisions will maximize overall social welfare.⁴⁸ As applied to environmental law and policy, public interest theory assumes that environmental public goods will be provided through legislation and administrative regulations because law and policy makers respond to the pressure and lobbying of their constituencies and civic environmental groups.⁴⁹

45. *Id.* pt. VI.32(1).

46. George J. Stigler, *The Theory of Economic Regulation*, 2 BELL J. ECON. & MGMT. SCI. 3 (1971).

47. Public interest theory traces its roots to the work of A.C. Pigou. A.C. PIGOU, *ECONOMICS OF WELFARE* 329-35 (4th ed. 1932). For a more recent exposition, see Steven P. Croley, *Public Interested Regulation*, 28 FLA. ST. U. L. REV. 7 (2000). For its application to environmental law, see PUBLIC INTEREST PERSPECTIVES IN ENVIRONMENTAL LAW (David Robinson & John Dunkley eds., 1995).

48. To observers of legislation and bureaucracy in Ghana, state regulation of timber markets is not surprising. This is because after independence there was a growth of public interest legislation. ANN SEIDMAN & ROBERT SEIDMAN, *STATE AND LAW IN THE DEVELOPMENT PROCESS: PROBLEM-SOLVING AND INSTITUTIONAL CHANGE IN THE THIRD WORLD* 220 (1994).

49. See Daniel Farber, *Politics and Procedure in Environmental Law*, 8 J.L. ECON. & ORG. 59, 64-65 (1992).

The public interest underpinnings of the TRMA were as follows: First, it was alleged that the chainsaw operators were a major cause of deforestation and environmental degradation.⁵⁰ This was because they tended to fell trees that had not matured, in effect undermining the government's reforestation and afforestation efforts.⁵¹ For this reason, the Regulations prohibited timber harvesting unless a special permit had been obtained for this purpose. The permits enabled official scrutiny of the chainsaw operators' activities.⁵² Despite this public interest foundation, the TRMA failed to produce effective regulation in several ways.

First, chainsaw operators have disregarded permit requirements. They have continued to harvest timber illegally.⁵³

Second, the TRMA did not adequately consider the ramifications of the small size of chainsaw operators. That small size meant that chainsaw operators did not have the financial means to embark on reforestation programmes, leading them to engage in unsustainable timber practices.⁵⁴ For the same reason, their small size makes them highly mobile outfits capable of exploiting forests in any part of Ghana at a moment's notice.⁵⁵ Thus, their small size makes them difficult to control and allows them to evade taxes on their activities and to deny the treasury much needed income.⁵⁶

Third, the chainsaw operators' on-the-spot conversion of trees had serious consequences for deforestation. Using chainsaws converts less than 20 percent of a felled log into lumber. In contrast, timber millers convert 30 to 35 percent of their logs to lumber.⁵⁷ Thus, the chainsaw operations led to cutting at least twice the volume of timber to produce the same amount of lumber as a timber miller.⁵⁸ This led to increased deforestation.

Fourth, under the TRMA the Minister is empowered to compel holders of TUCs to supply the domestic market with timber products.⁵⁹

50. Interview with Regional Forestry Officer, *supra* note 14.

51. *Id.*

52. TRM Regs., *supra* note 26, pt. VI.40(1).

53. Interview with Regional Forestry Officer, *supra* note 14.

54. *Id.*

55. *Id.*

56. *Id.*

57. TROPENBOS INTERNATIONAL—GHANA: FOCUS GROUP DISCUSSION, CHAINSAW LUMBER PRODUCTION: A NECESSARY EVIL? 7, 10 (2003), available at <http://www.tropenbos.nl/docs/finalreportchainsawlumber.pdf> (last visited Aug. 27, 2004) (suggesting that conversion rates are less than 20 percent but citing a different source that believes conversion rates may be higher).

58. *Id.*

59. TRM Regs., *supra* note 26, pt. VI.36.

This provision was designed to ensure a regular supply of good quality sawn lumber to the domestic market. The argument was that the millers tended to concentrate many of their logs on the export market. As a consequence, most of their products sold locally were neither first nor second grade sawn lumber. This adversely affected the domestic market because the chainsaw operators exploited this shortage in supply but, given their crude conversion process, they fed the local market with inferior sawn lumber. The consequence was the increased demand for new (and hopefully better quality) lumber, which resulted in increased exploitation of forests by the chainsaw operators.

In hindsight, TRMA was remarkably ineffective at addressing the real problems behind deforestation. That raises the question whether environmental protection was the real motivation behind the law or whether some other motivation was at work.

New Institutional Economics (NIE) is well suited to answer this question. NIE incorporates a theory of institutions and human behaviour into economics. NIE does not aim to challenge and overturn neo-classical economic theory,⁶⁰ and it does not attack and overturn methodological individualism,⁶¹ the basis of neoclassical economics.⁶² Instead, it modifies neoclassical economic theory by abandoning assumptions of instrumental rationality.⁶³ While neoclassical economics assumes a world free of institutions,⁶⁴ NIE sees institutions as crucial to determining policy outcomes. In departing from instrumental rationality and articulating the importance of institutions, NIE draws on insights from economics, political science, law sociology, anthropology, and organization theory to

60. See DOUGLASS C. NORTH, *THE NEW INSTITUTIONAL ECONOMICS AND DEVELOPMENT* 1 (Econ. Dep't of Wash. Univ., Working Paper No. 9309002, 1993), available at <http://econwpa.wustl.edu/eps/eh/papers/9309/9309002.pdf> (last visited Aug. 27, 2004).

61. Methodological individualism is the assertion that the social sciences should be studied from the viewpoint of individuals. In effect, individuals make decisions, not groups such as "parties, provinces or nations." James M. Buchanan, *Politics Without Romance: A Sketch of Positive Public Choice Theory and Its Normative Implications*, in *THE THEORY OF PUBLIC CHOICE II*, at 11, 13 (James M. Buchanan & Robert D. Tollison eds., 1984).

62. Traditional neoclassical economics assumes that individuals are rational decision makers. There are some "ambiguities" in the definition of rationality though. See Viktor J. Vanberg, *The Rationality Postulate in Economics: Its Ambiguity, Its Deficiency and Its Evolutionary Alternative*, 11 *J. ECON. METHODOLOGY* 1, 1-29 (2004). But see Anton D. Lowenberg, *Neoclassical Economics as a Theory of Politics and Institutions*, 9 *CATO J.* 619, 619-39 (1990) (arguing that Institutionalism and other challenges to neoclassical economics are "fallacious" because neoclassical economics has rapidly "expanded its empirical content and explanatory power" by bringing aspects of collective and institutional choice into the domain of economic theory).

63. NORTH, *supra* note 60, at 1.

64. *Id.* This is because neoclassical economic theory assumes that institutions are not necessary and both political and economic markets are perfect.

understand the origins, framework, success or failure, and the development of institutions.⁶⁵ However, NIE concedes the importance of methodological individualism as a means of understanding decision making.⁶⁶

In exploring motivations for particular decisions by individuals, NIE encompasses a broad range of theories that explain social, economic, and political institutions.⁶⁷ Stigler posits that market forces provide strong incentives for lawmakers to enact laws that serve private interests rather than the public interest.⁶⁸ Thus, well-organized interests in society lobby lawmakers and bureaucrats so as to secure legislation that is favourable to them.⁶⁹ The process of lobbying is referred to in the NIE literature as rent seeking.⁷⁰

Rent seeking is defined as the socially costly pursuit of wealth transfers.⁷¹ Industry engages in rent seeking from the government in a number of ways.⁷² For example, seeking state mandated control over

65. For an introduction to NIE, see DOUGLASS C. NORTH, *INSTITUTIONS, INSTITUTIONAL CHANGE AND ECONOMIC PERFORMANCE* (1990); and ERIK G. FURUBOTN & RUDOLF RICHTER, *INSTITUTIONS AND ECONOMIC THEORY: THE CONTRIBUTION OF NEW INSTITUTIONAL ECONOMICS* (1997). For its application to the study of the environment, see SEN WANG & CORNELIUS G. VAN KOOTEN, *FORESTRY AND THE NEW INSTITUTIONAL ECONOMICS: AN APPLICATION OF CONTRACT THEORY TO FOREST SILVICULTURAL MANAGEMENT* (2001); and JOUNI PAAVOLA & W. NEIL ADGER, *NEW INSTITUTIONAL ECONOMICS AND THE ENVIRONMENT: CONCEPTUAL FOUNDATIONS AND POLICY IMPLICATIONS* (Centre for Social and Economic Research on the Global Environment, Working Paper No. EDM 02-06 2002), available at http://www.uea.ac.uk/env/cserge/publications/wp/edm/edm02_06.pdf (last visited Aug. 27, 2004).

66. This is one of the major contrasts between NIE and the so-called Old Institutional Economics. For an introduction to Old Institutional Economics, see JOHN R. COMMONS, *INSTITUTIONAL ECONOMICS: ITS PLACE IN POLITICAL ECONOMY* (1934).

67. Originally applied to the work of transaction cost and property rights analysis, NIE has now been extended to Public Choice theory, economic history, the law and economics movement, and non-market social relationships. *HISTORY OF ECONOMIC THOUGHT, THE NEW INSTITUTIONALIST SCHOOLS*, at http://www.cepa.newschool.edu/het/schools/new_inst.htm (last visited Aug. 27, 2004). Under the broad rubric of NIE is George Stigler's influential paper on regulation. Stigler, *supra* note 46. See also Sam Peltzman, *Towards a More General Theory of Regulation*, 19 J.L. & ECON. 211 (1976); Richard Posner, *Theories of Economic Regulation*, 5 BELL J. ECON. & MGMT. SCI. 335 (1974).

68. Stigler, *supra* note 46.

69. For an elaboration on how this is done, see MANCUR OLSON, *THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS* (1971).

70. See Anne O. Krueger, *The Political Economy of the Rent Seeking Society*, 64 AM. ECON. REV. 291, 291-303 (1974); GORDON TULLOCK, *RENT SEEKING* (1993); GORDON TULLOCK, *THE ECONOMICS OF SPECIAL PRIVILEGE AND RENT SEEKING* (1989); Gordon Tullock, *Rents and Rent Seeking*, in *THE POLITICAL ECONOMY OF RENT SEEKING* 51 (Charles K. Rowley et al. eds., 1988).

71. Richard A. Posner, *The Social Costs of Monopoly and Regulation*, 83 J. POL. ECON. 807, 807-27 (1975).

72. Stigler, *supra* note 46, at 4.

entry into an industry by new rivals is a form of rent seeking. Such restrictions would either prohibit new entry outright or impose higher costs on new entrants,⁷³ thus enhancing profitability for existing participants. Thus, the conventional NIE assumption is that when an industry has enough political power to exploit national policy-making institutions, it will use this power to prevent the entry of rivals into a given market.

NIE encompasses Public Choice theory.⁷⁴ Proponents of Public Choice theory argue that, contrary to popular assumptions, public officials rarely act in the public interest. Instead, they are motivated by their own personal, usually economic and financial, goals. In effect, private interests drive public policy.⁷⁵ As we shall see below, the TRMA can be interpreted as the outcome of collusion between timber millers and national environmental bureaucrats in a manner well explained by NIE and Public Choice theories.

NIE has been applied to environmental decision making and outcomes⁷⁶ using Rational Choice theory, a variant of NIE. Both Rational Choice and NIE theories suggest that individuals try to make the most efficient decisions possible in an environment of scarce resources. In their rational pursuit of efficiency, humans become "utility maximizers" bent on securing the greatest benefit to themselves relative to the costs

73. Nathaniel O. Keohane et al., *The Choice of Regulatory Instruments in Environmental Policy*, 22 HARV. ENVTL. L. REV. 313, 348-50 (1998).

74. For the relationship between NIE and Public Choice theory, see HISTORY OF ECONOMIC THOUGHT, *supra* note 67.

75. Public Choice Theory is the study of "the complex exchange process that we call 'an economy.'" It applies tools and methods used to study market decision making to non-market settings such as bureaucracies. Buchanan, *supra* note 61, at 12-13. See also WILLIAM A. NISKANEN, JR., BUREAUCRACY AND PUBLIC ECONOMICS (1994); PATRICK MCNUTT, THE ECONOMICS OF PUBLIC CHOICE (2d ed. 2002). For a challenge to Public Choice, see LARS UDEHN, THE LIMITS OF PUBLIC CHOICE: A SOCIOLOGICAL CRITIQUE OF THE ECONOMIC THEORY OF POLITICS (1996); DONALD A. WITTMAN, THE MYTH OF DEMOCRATIC FAILURE: WHY POLITICAL INSTITUTIONS ARE EFFICIENT (1995); and Mark Kelman, *On Democracy-Bashing: A Skeptical Look at the Theoretical and "Empirical" Practice of the Public Choice Movement*, 74 VA. L. REV. 199 (1988).

76. See Jonathan Baert Weiner, *On the Political Economy of Global Environmental Regulation*, 87 GEO. L.J. 749 (1999); Moshe Hirsch, *Game Theory, International Law, and Future Environmental Cooperation in the Middle East*, 27 DENV. J. INT'L L. & POL'Y 75 (1998); Paul L. Joskow & Richard Schmalensee, *The Political Economy of Market-Based Environmental Policy: The U.S. Acid Rain Program*, 41 J.L. & ECON. 37 (1998). For a critique of the flaws of applying Public Choice theory to environmental policy, see DAVID TOKE, GREEN POLITICS AND NEO-LIBERALISM (2000); and John O'Neill, *Public Choice, Institutional Economics, Environmental Goods*, 4 ENVTL. POL. 197 (1995).

they incur. Rational Choice is thus an instrumental theory of human behaviour that seeks to interpret and explain human decision making.⁷⁷

Garett Hardin's analysis of unrestrained decision makers is an example of how Rational Choice theory can be used to understand environmental degradation.⁷⁸ Hardin asserts that it is rational for herdsmen using a common grazing area to engage in unrestrained grazing up until the point when the common grazing area is depleted and thus of no further economic value. In this process, wider society bears the costs of the rational man. This is because the consequences of his rational calculations are shifted outward to society at large in the form of unusable grazing land.⁷⁹

We must note here, however, that some scholars argue that there are flaws in Rational Choice theory. The essence of this criticism is that it does not fully explain human motivations—*i.e.*, not all individual decisions are determined by a narrow perception of self-interest. Civic obligations, commitment, and the desire to do what is right all serve to shape individual decision making.⁸⁰

Hardin's herdsmen on their common grazing area are analogous to chainsaw operators working in Ghana's forests. As such, NIE may provide useful insights into the practical realities underlying the failure of the TRMA and lead us to more effective policies.

77. For an introduction to Rational Choice theory, see HANNU NURMI, *RATIONAL BEHAVIOUR AND THE DESIGN OF INSTITUTIONS: CONCEPTS, THEORIES AND MODELS* (1998); GARY S. BECKER, *THE ECONOMIC APPROACH TO HUMAN BEHAVIOUR* (1976); and *RATIONAL CHOICE* (Jon Elster ed., 1986). For the application of Rational Choice methodologies to law in general and environmental law in particular, see Thomas S. Ulen, *Rational Choice and the Economic Analysis of the Law*, 19 *LAW & SOC. INQUIRY* 487 (1994); Christine Jolls et al., *A Behavioral Approach to Law and Economics*, 50 *STAN. L. REV.* 1471 (1998); and ELINOR OSTROM, *GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION* (1990). For a critique of Rational Choice theory, see DONALD P. GREEN & IAN SHAPIRO, *PATHOLOGIES OF RATIONAL CHOICE: A CRITIQUE OF APPLICATIONS IN POLITICAL SCIENCE* (1994); and EMILY HAUPTMANN, *PUTTING CHOICE BEFORE DEMOCRACY: A CRITIQUE OF RATIONAL CHOICE THEORY* (1996).

78. See Garrett Hardin, *The Tragedy of the Commons*, 162 *SCI.* 1243 (1968).

79. Kenneth A. Shepsle, *Studying Institutions: Some Lessons from the Rational Choice Approach*, 1 *J. THEORETICAL POL.* 131, 133 (1989).

80. With specific reference to environmental decision making, see Joseph P. Kalt & Mark A. Zupan, *Capture and Ideology in the Economic Theory of Politics*, 74 *AM. ECON. REV.* 279 (1984); Debra J. Salazar & Robert G. Lee, *Natural Resource Policy Analysis and Rational Choice Theory: A Strategy for Empirical Research*, 30 *NAT. RESOURCES J.* 283 (1990); David B. Spence, *The Shadow of the Rational Polluter: Rethinking the Role of Rational Actor Models in Environmental Law*, 89 *CAL. L. REV.* 917 (2001); and Farber, *supra* note 49.

III. NEW INSTITUTIONAL ECONOMICS AND THE MARKET FOR SAWN LUMBER IN GHANA

NIE leads us to examine the human interactions and institutions to explain policies. When the chainsaw operators entered the Ghana sawn timber market, they disrupted the status quo in which the timber millers exerted market control over the loggers. How did TRMA respond to this?

First, the Regulations ban chainsaw operators from converting logs into lumber.⁸¹ The Regulations therefore eliminate the millers' rivals in the lumber market. This forces the loggers to contract with the millers and so restores the balance of power in the market that was upset by the activities of the chainsaw operators. Although, some chainsaw operators still illegally fell and convert timber into lumber, loggers now have to resume contractual relations with the timber millers.

Second, logging firms must agree to a Social Responsibility Agreement (SRA) with the local community before timber can be harvested. On its face, this is a public interest provision because it seeks to compensate local communities for exploiting their natural resources. However, the practical effect of this is to co-opt the local communities into the rent-seeking coalition by motivating them to prevent chainsaw operators and the loggers entering into arrangements to illegally fell, buy, and sell logs. Any illegal felling of logs denies the local communities lucrative rents. Thus, while the TRMA as a whole provided a framework for local communities to benefit from the "rents of nature," it also permitted the timber millers to rein in the loggers and prevent them from seeking more profitable prices from chainsaw operators.

Third, the TRMA also generated revenue for the national environmental bureaucrats, thus satisfying their self-interest. Regulated loggers pay stumpage fees⁸² to the Administrator of Stool Lands⁸³ and the Forestry Department.⁸⁴ The Chief Conservator of Forests, the Administrator of Stool Lands, and the Forestry Commission are responsible for calculating stumpage rates.⁸⁵ Under the Regulations, a stumpage fee is to be paid by the holder of a TUC.⁸⁶ The holder of a TUC

81. TRM Regs., *supra* note 26, pt. VI.32(1).

82. Stumpage fees are "royalties to the landowner and charges for the cost of felled timber which provide a basic return to the landowner and contribute[] to the cost of forest management and timber regulation." *Id.* pt. V.21(2).

83. *Id.* pt. V.25(3).

84. *Id.* pt. 26(1), (2).

85. *Id.* pt. V.26(3).

86. *Id.* pt. V 21(1).

is also to pay rent to the Administrator of Stool Lands for his TUC area.⁸⁷ Stumpage fees provide a basic return to the landowner and also pay for the cost of forest management and timber regulation.⁸⁸

The ability to tax the immobile loggers has greatly enhanced the revenue accruing to the Forest Services Division.⁸⁹ Furthermore, with the re-establishment of the millers' control of the market for sawn lumber and the low prices they offer to the loggers for their timber, the TRMA has led timber loggers to increase their activities in order to recoup costs. While this increase in their activities results in greater volume of stumpage fees, it also aggravates deforestation.

Thus, a range of state officials benefit from increased logging. The importance of this is reinforced by the decision to transform the Forestry Department into a semi-autonomous and self-financing organization. Thus, fees from timber activities are crucial to its survival. Because chainsaw operators tend to avoid their financial obligations, it was in the interest of the Forestry Department to exclude them from the market for sawn lumber and to re-establish the pre-existing market equilibrium.

Examining the TRMA from an NIE perspective reveals why it failed. The TRMA failed at the most basic level—it failed to prevent deforestation—whether from chainsaw operators or loggers. NIE explains this failure by positing that the true rationale for the law was to protect timber mill owners—which it did successfully. But timber mill owners had no incentive to reduce deforestation. Indeed, more logging activity lowers the price that mills pay for logs, thus increasing the mills' profits. This example illustrates how NIE reveals institutional incentives and suggests that these insights would have value if applied prior to developing new policies.

IV. POSSIBLE SOLUTIONS TO THE PROBLEM OF DEFORESTATION IN GHANA

While it is easy to see the failure of the TRMA and to wish for different results, it is harder to suggest solutions. How should we regulate the harvesting of timber in Ghana's forests? A number of solutions could be proposed.

87. TRM Regs., *supra* note 26, pt. V.27.

88. *Id.* pt. V.21(2).

89. Interview with Regional Forestry Officer, *supra* note 14.

Do Nothing

Concern about Ghana's forests has persisted since the colonial era.⁹⁰ There is a longstanding view that Ghana's forests are under threat from unsustainable logging. But doing nothing suggests faith in market forces to correct any ecological disequilibrium brought about by over-logging. This argument is known as the exclusionist view of environmental resources.⁹¹ It assumes unlimited environmental resources and directs decision makers to exclude concerns about the impact of their activities on the environment.⁹² Advocates of the exclusionist thesis also posit that firms will adopt voluntary environmental restraints for a number of reasons. Environmental self-regulation may be seen as a strategic move by firms when they realize that previously ignorant and unorganized consumers are now beginning to value a cleaner environment. That new value increases the probability of more stringent government regulation. To avoid that, firms will proactively adopt environmental measures.⁹³ Thus, the exclusionist thesis could justify the do-nothing approach because policy makers could argue that over time timber firms and chainsaw operators would become more aware of the need to conserve forests and will do so voluntarily.

Privatization

A second option available to Ghanaian policy makers is the privatization of forests. Private property in environmental resources is designed to change the behaviour of firms that seek to exploit the commons. Property rights in natural resources promote economic

90. See, e.g., GOLD COAST COLONY, REPORT ON THE FORESTRY DEPARTMENT FOR THE YEAR 1945-46, at 5 (1946) (noting that human over-exploitation of the forests in the Gold Coast (now Ghana) is the first of a chain of events that would culminate in complete deforestation). See also FAIRHEAD & LEACH, *supra* note 5, at 60 (noting over-exaggeration of deforestation in Ghana). This "do nothing" approach has gained some currency in academia. The thrust of this contention is that either the problem is over-exaggerated or markets will correct any environmental imbalances caused by human activity. This argument is implicit in the works of scholars such as Julian Morris and Jacqueline Kasun. JULIAN MORRIS & ERNEST H. PREEG, THE POLITICAL ECONOMY OF LAND DEGRADATION: PRESSURE GROUPS, FOREIGN AID AND THE MYTH OF MAN-MADE DESERTS (1995); Jacqueline R. Kasun, *Doomsday Every Day: Sustainable Economics, Sustainable Tyranny*, 4 INDEP. REV. 91 (1999).

91. GARETH PORTER & JANET WELSH BROWN, GLOBAL ENVIRONMENTAL POLITICS 23-24 (2nd ed. 1996). This view is thus highly critical of sustainable development.

92. *Id.*

93. John W. Maxwell et al., *Self-Regulation and Social Welfare: The Political Economy of Corporate Environmentalism*, 43 J.L. & ECON. 583 (2000).

efficiency in resource utilization.⁹⁴ Private property in the commons will create an incentive for timber firms to internalise any externalities.⁹⁵ Private property enthusiasts argue that over-exploitation of the commons is a consequence of the absence of private property rights. In effect, privatization would guarantee responsible timber operations, as firms would have an incentive to protect their own natural resource. Applied to Ghana's forests, this would mean assigning ownership of the productive forests to individual companies.⁹⁶

Recent developments indicate that a gradual evolution is occurring toward a private property regime over Ghana's forests. In the opinion of some observers, this privatization of the forests is the last stage in the evolution of the rights to the commons.⁹⁷ The privatization process begins when there is a scarcity of a particular natural resource. As demand for a scarce resource increases, parties with a direct interest in the exploitation of the resource begin to lobby for the transformation of the existing property regime from a public regime to a private regime with well-defined property rights.⁹⁸ That appears to be happening in Ghana's timber market.

Deforestation is resulting in the scarcity of timber. Parties with a direct interest (the timber millers) are lobbying for regulation of their competitors (protecting their access to the resource). The government has decided to regulate the market. These are the features that characterize a move towards privatization of natural resources.⁹⁹

Private rights over natural resources can evolve when the state initiates measures such as the allocation of allowances or it intervenes in economic relationships.¹⁰⁰ We have seen this in the TRMA provision that allocates TUCs and excludes chainsaw operators. The next step could be

94. R. Quentin Grafton et al., *Private Property and Economic Efficiency: A Study of a Common Pool Resource*, 43 J.L. & Econ. 679 (2000).

95. Externalities are the negative consequences of any economic undertaking that are not borne by the individual engaged in such activity. Internalizing externalities then means making the individual bear the full "social cost" of his economic activity. A good example is that of the "polluter-pays" principle. For a general discussion of externalities, see Harold Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. 347, 347-59 (1967).

96. See BANAHENE, *supra* note 9, at 28 (arguing in support of private property over the commons as this would guarantee companies long-term access to their raw materials).

97. See Bruce Yandle, *Grasping for the Heavens: 3-D Property Rights and the Global Commons*, 10 DUKE ENVTL. L. & POL'Y F. 13, 28-30 (1999).

98. See Demsetz, *supra* note 95, at 356.

99. See Yandle, *supra* note 97, at 30.

100. *Id.* at 31. Another means by which private rights to the commons can emerge is when there are no organized lobbies keen to secure the grant of property rights through state legislative or administrative action. In such an instance, the rights over the commons evolve gradually. *Id.* at 30.

when competing interest groups (chainsaw operators and timber millers) express an overriding demand for private rights, and the previously regulated property becomes private property. Arguably, this process might be taking place already in Ghana. Given the special interests that lobbied for the TRMA,¹⁰¹ the continued illegal activity of the chainsaw operators, and the acknowledgement by the state that it does not have the power to halt their activities, it is possible that we could end up with a wholly private property regime.

Paying Chainsaw Operators Not to Log

Preventing deforestation could also be done through policy makers and/or the timber millers paying the chainsaw operators to exit the market altogether. This is because the persistence of chainsaw operators in the timber market can be explained by the failure of the rent-seeking coalition (the timber millers and environmental bureaucrats) to offer sufficient compensation to them. Paying the chainsaw operators to leave the timber market is an illustration of the arguments by Ronald Coase in his seminal work on decision making.¹⁰² The Coasean analysis shows that when certain costs¹⁰³ are zero, parties can reach an agreement to allocate rights and liabilities to promote efficient outcomes. Coase's analysis has been applied to environmental policy and problems and has led to the conclusion that bargaining between parties can produce environmentally efficient outcomes.¹⁰⁴ However, the problem with applying the Coase Theorem to compensating chainsaw operators for their losses would be how to prevent the illegal entry or re-entry into the market by new or old chainsaw operators.

101. Interview with Regional Forestry Officer, *supra* note 14.

102. R.H. Coase, *The Problem of Social Cost*, 3 J.L. & Econ. 1 (1960).

103. These include transaction costs, the costs associated with discovering the relevant prices, the costs of negotiating and concluding contracts, and the costs of making long-term contracts. *Id.* Other definitions of transaction costs exist. Thrainn Eggerston sees transaction costs as the costs that arise when individuals exchange ownership rights to economic assets and enforce their exclusive rights. THRAINN EGGERSTON, *ECONOMIC BEHAVIOR AND INSTITUTIONS* 14–15 (1990); Yoram Barzel defines transaction costs as the costs associated with the transfer, capture, and protection of rights. YORAM BARZEL, *ECONOMIC ANALYSIS OF PROPERTY RIGHTS* 4 (2d ed. 1997).

104. See Roger A. Sedjo, *Property Rights, Genetic Resources and Biotechnological Change*, 35 J.L. & ECON. 199 (1992); Thomas A. Rhoads & Jason F. Shogren, *Cosean Bargaining in Collaborative Environmental Policy*, in *THE LAW AND ECONOMICS OF THE ENVIRONMENT* (Anthony Heyes ed., 2001); Vivien Foster & Robert W. Hahn, *Designing More Efficient Markets: Lessons from Los Angeles Smog Control*, 38 J.L. & ECON. 19 (1995).

Regulating Contracts Between Millers and Loggers

Another approach could be for the state to intervene in the contracts between the loggers and the millers. As noted above, in the present arrangement, the loggers have no recourse to alternate buyers of their logs at favourable prices. This is a consequence of collusion on prices between the timber millers, made possible by the lack of an antitrust law in Ghana. State regulation of timber contracts could require millers to inspect timber before it is felled and to give an enforceable guarantee that they will purchase it upon delivery. Failure to do so could subject the millers to a civil action for damages. This will probably be sufficient incentive for the millers to abide by the terms of an agreement they enter into at the point of inspection.

CONCLUSION

This analysis of the TRMA using NIE concepts suggests that the TRMA was at least partly driven by private interests keen to secure their own pecuniary advantages. The role that public interest (environmental) arguments played was that they provided the necessary cover for the rent-seeking coalition. The rent-seeking coalition was successful because it argued that the TRMA was environmental legislation instead of a private wealth-enhancing statute. The coalition did this by skilfully manipulating the political transaction costs that came in the wake of the TRMA.

Political transaction costs are those costs to obtain information about the benefits or costs of statutes or administrative regulations.¹⁰⁵ Political transaction costs tend to be high for unorganised consumers and other individuals but tend to be low for organizations. This creates opportunities for rent-seeking coalitions to secure favourable legislation by offering a public interest explanation for private interest legislation. NIE theory reveals how rent seeking, public choice, and rational choice explain the outcomes in the TRMA. This article also suggests that TRMA came to be presented as public interest legislation through the manipulation of political, social, and environmental information.

105. Douglass C. North, *A Transaction Cost Theory of Politics*, 2 J. THEORETICAL POL. 355 (1990).