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Conducting Comparative Research on Environmental Policy**

ABSTRACT

This study demonstrates how research in comparative environmental policy can benefit from theories in the field of comparative politics. After discussing the problems and benefits of pursuing cross-national studies of environmental policy, the study reviews research previously conducted in the area. The failure to apply theories of comparative politics in previous studies is noted. Accordingly, two theoretical approaches from the comparative politics literature are examined and applied to deforestation as an example. Suggestions for future research are offered at the conclusion of the investigation.

Many analysts are becoming increasingly frustrated with existing theoretical and methodological approaches to the study of environmental policy. While most scholars respect current research efforts in environmental policy, one is hard pressed to identify any major theoretical or methodological breakthroughs that have recently occurred in this field. So called "new" approaches to environmental policy analysis are actually old ones—with minor revisions—in disguise.¹

One of the main reasons for the lack of progress in this area is the conceptual preoccupation of most researchers with *American* federal and state natural resource issues. The nearly exclusive focus on American politics by researchers has seriously limited their ability to develop a comprehensive understanding of the international forces affecting global environmental issues. As a consequence, most analysts have a narrow theoretical conception of the relationship between American environmental problems and actions and those of other nations.

This study attempts to ameliorate the situation by demonstrating the potential usefulness of studying natural resource problems from a *com-*

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1. E.g., Linder & Peters, *A Design Perspective on Policy Implementation: The Fallacies of Misplaced Prescriptions*, 6 Pol. Stud. Rev. 459 (1987); D. Bobrow & J. Dryzek, *Policy Analysis By Design* (1987).

parative perspective. In particular, it shows how scholarship in comparative public policy can benefit from the field of comparative politics. Following several general observations about the problems and benefits of comparative research, the paper introduces two theoretical frameworks from the comparative politics literature (as examples) and applies them to a specific environmental problem, deforestation. Suggestions for future research are offered at the conclusion of the study.

PROBLEMS AND BENEFITS OF COMPARATIVE RESEARCH

Comparative research, of course, is not without its theoretical and methodological problems.² Heidenheimer, Hecllo, and Adams, for example, discuss the fundamental problem of distinguishing between politics and policy in various language traditions.³ While English-speaking scholars have two words, French, German, and most other foreign scholars use only one word to refer to both politics and policy. Obviously, this can lead to confusion in theory construction and hypothesis testing.

In addition to such basic problems associated with language usage, there often are obstacles to research design, accurate data collection and analysis, and the operationalization and measurement of key concepts. In comparison to the United States, other countries, particularly those in the Third World, do not share the same fervor for collecting accurate and scientific data and keeping precise records and statistics. Questions also can arise concerning the equivalency of systems and issue specificity and comparability. The clear separation of power between the three branches of government, the broad authority of the EPA to regulate industries and government and enforce environmental laws, the presence of well-funded, organized public interest groups, and the highly legalistic nature of American society are unique to the United States.

Finally, the role played by external forces in encouraging or discouraging environmental protection in many Third World nations is not comparable in intensity and strength to the United States and other Western countries. For instance, the role of international organizations (for example, the World Bank) in providing financial or other aid to developing nations is an additional and crucial factor in natural resource management.

In spite of these problems, there are several important benefits to analyzing natural resource issues from a cross-national perspective. First, in contrast to studying only one country, such as the United States, comparative inquiry can lead to broader generalizations.⁴ This is espe-

2. Space limitations prevent a comprehensive analysis of these problems in comparative research. However, consult A. Przeworski & H. Teune, *The Logic of Comparative Social Inquiry* (1970).

3. A. Heidenheimer, H. Hecllo & C. Adams, *Comparative Public Policy: The Politics of Social Choice in Europe and America VII* (2d ed. 1983).

4. A. Przeworski and H. Teune, *supra* note 2, at 4.

cially true when time and space factors are incorporated as control variables in the investigation and in the development of generalizations.⁵

Second, comparative research endeavors play an intellectual linking function between different disciplines.⁶ In the area of natural resource study, such endeavors might encourage, for example, sociologists, historians, economists, political scientists, and environmental scientists from different countries to work together. Among other things, this can lead to greater insight into the dynamics of important concepts in social science.

Third, American and non-American social scientists can increase their understanding of their own systems through comparative studies.⁷ This approach allows researchers to distinguish the "systemic" differences which exist at both the national and subnational level and to place their own system in a proper context. Comparative studies also can help pinpoint weaknesses in the dominant mode of domestic natural resource policymaking at a general theoretical level.⁸

Finally, examining environmental policy from a cross-national perspective can provide scholars tools and concepts for dealing with unavoidably transnational analyses. This is particularly true where an analyst is dealing with border resource problems, multinational actors, or common property resources. The growing recognition that many ecological problems ignore national boundaries and require international attention illuminates the importance of this benefit.

COMPARATIVE ENVIRONMENTAL POLICY AND COMPARATIVE POLITICS: A POSSIBLE INTELLECTUAL NEXUS

Compared to other policy areas, cross-national environmental policy research is an underdeveloped field of study. Health and education, for example, have received much more attention by policy analysts.⁹ Since awareness of threats against the global ecosystem surfaced as recently as the late 1960s, comparative studies on environmental problems only began

5. *Id.*

6. A. Heidenheimer, H. Hecló & C. Adams, *supra* note 3, at 8.

7. *Id.*

8. For many years American researchers in public policy and administration largely ignored European models which they had once extensively studied. At the same time, European researchers perceived American politics and processes as unique. Since the 1970s, however, there has been increasing recognition that the policy problems faced by democratic systems of North America and Western Europe—including ecological ones—are fairly similar. This recognition is becoming a motivation for analyzing how different governmental institutions vary in achieving common policy objectives.

9. In perhaps the best known book on comparative public policy, Heidenheimer and his colleagues do not include a chapter on environmental policy. See A. Heidenheimer, H. Hecló & C. Adams, *supra* note 3.

to appear in the mid-1970s.¹⁰ However, research in the area has substantially increased in the 1980s.

Heidenheimer, Heclo, and Adams define comparative public policy as "the study of how, why, and to what effect different governments pursue particular courses of action or inaction."¹¹ After an extensive review of the literature, the authors of the present study identified about 35 works that pursued this approach in their analysis of environmental policy issues across national borders. A number of these investigations were guilty of an over reliance on the case study method, thereby making the development of broad generalizations difficult. Others tended to be descriptive and ahistorical. Perhaps most noticeably, many studies were devoid of comparative politics theory.

Previous studies on comparative environmental policy can be grouped according to their major thrusts. Clearly, a large body of the literature tends to focus on implementation and evaluation, primarily because similar regulation was enacted about the same time in different countries.¹² Many of these studies concentrate on Western countries and explore the policy differences among them.¹³

Another group of studies have focused on how the structure of politics and government tends to affect environmental policymaking across national borders.¹⁴ Others have criticized this approach recommending, instead, greater emphasis on the interplay between structural and behavioral explanatory factors.¹⁵

Several researchers have taken a legal/political perspective in their analysis of comparative environmental policies.¹⁶ These studies have cov-

10. Vogel & Kun, *The Comparative Study of Environmental Policy: A Review of the Literature*, in *Comparative Policy Research: Learning from Experience* 99 (M. Dierkes, H. Weiler & A. Berthoin eds. 1987).

11. A. Heidenheimer, H. Heclo & C. Adams, *supra* note 3, at 2-3.

12. Heidenheimer, *Comparative Public Policy at the Crossroads*, 5 J. Pub. Pol. 441-65 (1985).

13. E.g., L. Lundqvist, *The Hare and the Tortoise: Clean Air Policies in the United States and Sweden* (1980); S. Kelman, *Regulating America, Regulating Sweden: A Comparative Study of Occupational Safety and Health Policy* (1981); W. Mangun, *The Public Administration of Environmental Policy: A Comparative Analysis of the United States and West Germany* (1977); Wandesforde-Smith, *Environmental Impact Assessment and the Politics of Development in Europe*, in *Progress in Resource Management and Environmental Planning* (T. O'Riordan and R. Turner eds. 1980); Coppock, *Chemical Risk Analysis: A Comparison of Public and Private Sector Assessments*, in *Distributional Conflicts in Environmental Resource Policy* (A. Schnaiberg, N. Watts & K. Zimmerman eds. 1986).

14. E.g., R. Brickman, S. Jasanoff & T. Ilgen, *Controlling Chemicals: The Politics of Regulation in Europe and the United States* (1985).

15. E.g., P. Knoepfel et al., *Comparing Environmental Policies: Different Styles, Similar Content*, in *Comparative Policy Research: Learning from Experience* (M. Dierkes, H. Weiler & A. Berthoin eds. 1987).

16. E.g., Brickman & Jasanoff, *Concepts of Risk and Safety in Toxic-Substances Regulation: A Comparison of France and the United States*, in *Environmental Policy Formation* (D. Mann ed. 1981); Marcus, *Compensating Victims for Harms Caused by Pollution and Other Hazardous Substances: A Comparison of American and Japanese Policies*, 8 L. & Pol. 189-211 (1986); E. Rehfinder and R. Stewart, *Environmental Protection Policy* (1988).

ered industrialized countries, basing their comparisons on the courts, the bureaucracy, organized interests, local governments, and the legislature.

Another group of scholars directly or indirectly tend to touch upon how environmental issues reach the government's agenda.¹⁷ Again, with heavy emphasis on Western industrialized nations, this approach has benefited from the development of conceptual models for comparative research.¹⁸

Two sets of studies on comparative environmental policy have partially adopted central principles from comparative politics theory. One group has used the concept of economic development to explain differences in environmental policy. This approach has been able to include developing nations and their problems with natural resource management in a comparative perspective.¹⁹ Another group of researchers has relied on culture, along with other variables, to explain comparative differences in environmental policy. For example, Kelley, Stunkel, and Wescott's study of the United States, the Soviet Union, and Japan relies on political culture, along with other factors, to explain natural resource policy in the three countries.²⁰ For instance, the dominant attitude among Americans toward nature from colonial times to the present has reflected a tendency to use it to reap material benefits. In contrast, traditional Japanese art, philosophy, literature, and religious belief implies a human kinship with plants and animals. Postwar industrialization has challenged—and will continue to challenge—this orientation toward an harmonious interaction between human and natural realms. Thus, Japanese economic growth and environmental policies are likely to exhibit schizophrenic tendencies.

An emphasis on economic development and political culture, seldom found in comparative environmental policy studies, brings us closer to the parameters of the comparative politics field. However, economic growth, industrialization, and culture have received little attention in recent investigations on comparative environmental policy. Very few studies exist that compare and contrast environmental issues between First and Third World countries. Most researchers, understandably concerned with the similarity of systems, tend to concentrate on North America, the EC, and Japan. Investigations seeking to draw comparisons between two

17. E.g., L. Milbrath, *Environmentalists: Vanguard for a New Society* (1984); D. Nelkin & M. Pollak, *The Atom Besieged: Anti-Nuclear Movements in France and Germany* (1981); Solesbury, *Issues and Innovations in Environmental Policy in Britain, West Germany, and California*, 2 *Pol. Anal.* 1-38 (1976); Reich, *Mobilizing for Environmental Policy in Italy and Japan*, 16 *Comp. Pol.* 379-402 (1984).

18. Cobb, Ross & Ross, *Agenda Building as a Comparative Political Process*, 70 *Amer. Pol. Sci. Rev.* 126-38 (1976).

19. E.g., C. Enloe, *The Politics of Pollution in a Comparative Perspective: Ecology and Power in Four Nations* (1975); R. Siegel & L. Weinberg, *Comparing Public Policies: United States, Soviet Union, Europe* (1977).

20. D. Kelley, K. Stunkel & R. Wescott, *The Economic Superpowers and the Environment: The United States, the Soviet Union, and Japan* (1976).

or more developing countries over time are not common. As a result, level of economic development, while theoretically important and worthy of independent variable status, is relegated to a control variable.

In contrast to the newly evolved and expanding field of comparative public policy, comparative politics has undergone numerous changes over the last four decades. These changes have taken place in two eras.²¹ Works published in the 1950s and 1960s attempted to explain divergent issues based on a single approach. They were geared toward formulating a grand theory, with global implications, of comparative politics. In the post-Vietnam War era of the 1970s and 1980s, the field of comparative politics was fragmented. The research emphasis shifted to area studies, which were at first primarily descriptive and atheoretical. The goal of these studies, however, eventually became the development of middle-range theories. Nevertheless, at the conclusion of Verba's analysis of the state of the field of comparative politics, he writes:

The state of the discipline is rather like the state of the world—appalling. Almost universally, scholars and practitioners complained of the division, fragmentation, and atomization of the field. There are too many special interests, too many narrowly focused research concerns, no center of intellectual gravity.²²

The disarray of the field can be viewed in a positive rather than in a negative light. The fragmentation of the discipline is the result of intense scrutiny of the traditional Anglo-American conceptualization of the world, in-depth country and regional studies, and greater consideration for culturally based explanations of issues and events. If anything, the field is slowly maturing and moving towards broader theories. As Verba explains:

Comparative politics is and has been disappointing to some, but it is disappointing in comparison to past aspirations and hopes, not disappointing in terms of its accomplishments or in comparison to where we were two and a half decades ago.²³

The great diversity and varied theoretical approaches, while confusing or even frustrating at first, do provide a rich array of options from which to choose. Despite the divergence of the comparative politics field, it has the potential to expand our knowledge of complex phenomenon in public policy. Clearly, numerous environmental policy issues extend beyond national borders and are well suited for the application of comparative politics theory. Among these policy issues are acid precipitation, air and

21. For a brief but insightful review of these eras, refer to Wiarda, *Comparative Politics: Past and Present*, in *New Directions in Comparative Politics* 3-25 (H. Wiarda ed. 1985).

22. Verba, *Comparative Politics: Where Have We Been, Where Are We Going?* in *New Directions in Comparative Politics* 28 (H. Wiarda ed. 1985).

23. *Id.* at 29.

water pollution, wildlife protection, land use planning, the conservation of mineral and energy resources, and the generation, transportation, and disposal of chemical and nuclear waste. Many of these problems are complex and interrelated, thereby necessitating the adoption of well-defined theoretical approaches. Which theory of comparative politics is the most applicable to a particular study largely depends on the prominence given to the forces behind the decisions made by different systems of government.

The next section focuses on one major environmental problem, deforestation. It is a natural resource problem which clearly extends beyond national borders, irrespective of economic development. Two different theoretical concepts in comparative politics—political culture and modernization and development—are utilized. The purpose is to show the ways in which analysis and theory-building in natural resource policy can benefit from at least a partial application of important theoretical principles in comparative politics.

DEFORESTATION: AN EXAMPLE

Deforestation is an extremely serious and pervasive problem. In the last 5,000 years, forests have been reduced from about 50 percent of the earth's land surface to approximately 20 percent.²⁴ In recent years, the devastation has accelerated. Since 1950, for example, Africa has lost 23 percent of its trees, Central America 38 percent, and the Himalayan watershed 40 percent.²⁵ As Table 1 shows, tropical rain forests are disappearing at an alarming rate. Moreover, acid rain has damaged or destroyed half of West Germany's forests and large numbers of trees in other European countries (for example, Switzerland). Forests in the United States continue to decrease in area and now contain only about one fifth the number of trees as they did when the Pilgrims landed.²⁶ Overall, it is projected that by the year 2000 forests will cover about 17 percent of the globe and only 14 percent by the year 2020.²⁷

The hastened disappearance of forests around the world has recently received serious international attention, primarily because of the widely recognized importance of trees to medicine, national economies, and the maintenance of the earth's ecosystem.²⁸ In many countries trees provide watersheds, lumber, fuel, and food, as well as raw material for paper,

24. MacDougall, *Worldwide Costs Mount as Trees Fall*, L.A. Times, June 14, 1987, at A1, col. 1.

25. *Id.* at 1.

26. *Id.* at 1.

27. *Id.* at A42, col. 2.

28. Rain forests, for example, produce a number of valuable drugs including physostigmine (glaucoma), reserpine (hypertension), digitalis (heart disease), and quinine (malaria). Williams, *Rain Forest and Its Medical Secrets Shrinking Fast*, L.A. Times, Apr. 11, 1988, at B10, col. 1.

TABLE 1.
Annual Loss of Tropical Forests, in Thousands of
Acres, 1981-1985

Brazil	3,656	Bolivia	215
Columbia	2,025	Nepal	207
Indonesia	1,482	Cameroon	198
Mexico	1,470	Costa Rica	161
Nigeria	741	Vietnam	161
Ivory Coast	716	Sri Lanka	143
Peru	667	Liberia	114
Malaysia	630	Angola	109
Thailand	622	Zambia	99
Paraguay	469	Guinea	89
Zaire	450	Panama	89
Madagascar	370	Ecuador	84
India	363	Cambodia	62
Venezuela	309	Congo	54
Nicaragua	299	Ghana	54
Burma	259	Papua New	
Laos	247	Guinea	54
Philippines	225	Kenya	47
Guatemala	222	Guinea-Bissau	42
Honduras	222	Gabon	37

Hardest Hit Countries, By Yearly Rate of Deforestation, in Percent

Ivory Coast	5.9%
Paraguay	4.6
Nigeria	4.0
Costa Rica	3.9
Nepal	3.9
Haiti	3.1
El Salvador	2.9
Gambia	2.8
Nicaragua	2.7
Benin	2.6
Guinea-Bissau	2.6
Honduras	2.4
Thailand	2.4
Ecuador	2.3
Liberia	2.2

Source: L. A. Times, June 14, 1987, at A43, col. 3.

plastics, and over a thousand other products. A significant number of Third World nations (for example, Indonesia) depend on lumber exports to bring in badly needed revenue.²⁹

The Causes

The causes of deforestation are quite intricate and complex. Among the major activities that contribute to the loss of forests are farming, grazing of livestock, lumber and firewood production, and war.³⁰ Population growth, road building, tax incentives and government subsidies for agriculture, land speculation, and the need for fuel for cooling and heating all contribute to the removal of trees. Admittedly, humans are not responsible for all deforestation. Windstorms, volcanic eruptions, fires resulting from lightning, and drought have destroyed acres of trees. Deer, porcupines, beavers, gophers, rats, and other wild animals feed on trees. Dwarf mistletoe and other parasitic plants suck and smother trees, and beetles, budworms, gypsy moths, and other insects, along with rust, rots, blights, and other diseases, kill more trees than people harvest.³¹ Effective forest management practices can minimize many of these problems.

Theoretical Approach

An extensive historical analysis of policy development in various nations, along with basic information concerning social stratification, interest group activity, the structure and process of government, and other factors relating to social, economic, and political organizations can greatly aid researchers in selecting the most appropriate theoretical approach. Here, in brief, the possible applicability of two critical theoretical concepts, political culture and modernization, are discussed.

29. The greatest threat of deforestation, however, is to the continued equilibrium of the ecosystem. The uncontrolled destruction of forests has the real potential of altering the global climate, especially in temperate areas like the United States, Europe, and Japan. Changes in weather (specifically, temperature and humidity) will eventually affect the water cycle and the biogeochemical cycle in the soil. Solar energy, instead of being used for water evaporation, will be used for heating air. Photosynthesis also will suffer from accelerated timber cutting. The ozone layer is thinnest at the equator, and ultraviolet radiation will begin to get through in greater quantity due to interference in a combination of chemical processes. Although covering only seven percent of the world's land surface, the green tropical forest belt around the equator contains about half of all known species of plants and animals, with perhaps millions more waiting to be discovered. The high plant and animal diversity as well as the high degree of plant and animal interaction will be eliminated if the current rate of deforestation is permitted to continue in this area of the world. Data on these issues are reported in Crutzen, *Losing the Atmosphere's "Cleaning Agent"*, 9 UNU Work in Progress 7 (Nov. 1985); MacDougall, *supra* note 24, at A42; Mori & Prance, *Disrupting the Web of Life*, 9 UNU Work in Progress 6 (Nov., 1985).

30. MacDougall, *Need for Wood Forestalled Conservation*, L. A. Times, June 17, 1987, at A1, col. 1.

31. MacDougall, *supra* note 24, at A42.

Political Culture: Political culture studies are extensive, controversial, and, in terms of application, somewhat problematic. Inquiries into political culture have expanded along two main areas, communication and political socialization. Communication studies originated from the belief that the expansion of communication breaks down the structure of traditional societies and paves the way for the establishment of the nation-state. Political culture has been analyzed in various terms, including mobilization, participation, and interest articulation and aggregation.³² Political socialization concentrates on formal and informal agents of socialization such as family, school, and peer groups.³³ Normally, socialization studies focus on the stimuli that affect an individual at different points in the maturation process, and thereby seek to increase knowledge about the individual at present.³⁴

Theories about political culture, for example, might explain variations in public policy concerning deforestation in different countries.³⁵ In the United States and West Germany, acid rain and ozone pollution have been blamed for the destruction of many trees. Yet West Germany has taken stronger steps to protect their trees from acid rain and ozone pollution.³⁶ Unlike most Americans, West Germans begin to develop a deep affection for their forests during childhood. To many adults the forests of Germany (especially the Black Forest) have long been regarded as a national symbol. A political culture study, possibly incorporating theories of political socialization, might address the following questions: What is at the root of West Germans' appreciation of forests? To what extent have the family and school served as agents of socialization? Why have not economic development and technological progress interfered with the socialization process? Are Americans socialized differently in terms of the way they view forests? Does the emphasis placed on land ownership in the United States color people's attitudes toward trees? Answers to these questions might point to other aspects of political culture worth exploring. For instance, does a positive cultural orientation toward forests extend into the political arena? What is the relationship between development and growth and political culture?

Modernization, Development, and Underdevelopment: The conceptual

32. E.g., G. Almond & J. Coleman, *The Politics of Developing Areas* (1960); K. Deutsch, *The Nerves of Government* (1963); L. Milbrath & M. Goel, *Political Participation* (2d ed. 1977).

33. R. Sigel, *Learning About Politics: A Reader in Political Socialization* (1970).

34. E.g., M. Jennings & R. Niemi, *Generations and Politics: A Panel Study of Young Adults and Their Parents* (1981).

35. An example of this approach is found in Greenstein, *The Benevolent Leader Revisited: Children's Images of Political Leaders in Three Democracies*, 69 *Am. Pol. Sci. Rev.* 1371-398 (1975).

36. German Marshall Fund, *Dying Appalachian Forests: Is the Answer in the Wind?* 15 *Transatlantic Perspectives* 3 (Summer, 1986).

framework of development and modernization is extensively pursued in research on comparative politics and, probably more so than the idea of political culture, contains important clues for the cross-national study of environmental policy. Works in the field generally fall under two major paradigms: the mainstream or orthodox paradigm (that is, the developmentalists) and the radical paradigm or dependency approach.³⁷ In some studies, however, the lines of argument are not clearly drawn. For instance, there are developmentalists who have utilized some positions of dependency theorists and dependency theorists who are split between Marxist and non-Marxist approaches.

The developmentalist perspective has undergone many changes in the last three decades, and many scholars who once wrote on the subject have altered their focus. At first, the premises of democratic rule dominated studies on development and modernization. It was assumed that economic growth would eventually lead to the establishment of a democratic, Western type polity. Attention in the late 1960s shifted to the concept of change and resulting problems or crises. Attempts to formulate grand theories of development were unsuccessful. Instead, most scholars offered their own definitions of modernization and development, and constructed their own models and typologies. Links were made between development and communication, and development and nationalism.³⁸ Theories outlining stages of development were formulated and revised, and attempts were even made to separate the concept of development from the notion of modernization.³⁹

A number of serious problems continued to haunt the mainstream theorists of development. There was a persistent Western bias in ideas, concepts, and basic premises in studies in the area. Traditional societies were viewed as inherently underdeveloped. It was assumed that their patterns of development were going to resemble the phases of modernization experienced by the Western world. In the tradition of Max Weber, the temptation was to formulate an ideal type (for example, the efficiency and orderliness of an industrial society) for the purpose of contrast and comparison. Modernity and tradition were treated as two distinct schemes.

The failure to explain and include serious and persistent problems plaguing the Third World, such as increasing hunger and poverty and the

37. A discussion of these two paradigms can be found in J. Bill & R. Hardgrave, *Comparative Politics: The Quest for Theory* (1981); R. Chilcote, *Theories of Development and Underdevelopment* (1984).

38. Two examples are K. Deutsch, *Nationalism and Social Communication* (1953), and K. Deutsch, *Nationalism and Its Alternatives* (1969).

39. E.g., W. Rostow, *The Stages of Economic Growth: A Non-Communist Manifesto* (1960); A. Organski, *The Stages of Political Development* (1965); W. Rostow, *Politics and Stages of Growth* (1971).

displacement of the peasantry, prompted the strengthening of a counter paradigm in comparative politics. In the 1970s and 1980s the orthodox model of development was forced to take a back seat to the more sophisticated radical paradigm on underdevelopment. This paradigm encompassed both Marxist and non-Marxist approaches. The non-Marxist approach was an outgrowth of the practices followed by the United Nations in dealing with world problems. The Marxist views on development overlapped and were often known by the different authors who originated them. These works were formulated around central concepts, such as unequal development, uneven development, and capitalist development in the center and underdevelopment at the periphery.⁴⁰ They also included studies of imperialism and various perspectives under the general rubric of dependency theory.⁴¹

In contrast to the developmentalist perspective, traditionalism was not viewed as the primary stage of development but its end result. Case studies of countries in Latin America, Africa, and Asia suggested the presence of dual economies; only certain industries were modernized, not the entire society and state. This partial modernization increased dependence on industrial nations as well as the international economic system. The modern and traditional sectors operate together perpetuating further underdevelopment. The Third World faces problems stemming from the First World monopoly and domination of the international system. The exploitee-exploiter relationship contributes to the perpetual backwardness of dependent nations.

Despite diverse approaches, conflicts, and continuous revisions, the radical paradigm of development has made an important contribution to the understanding of the "underdevelopment" of the Third World. However, according to Chilcote:

There remains the task of applying aspects of dependency to particular situations in the less developed world. Marxist and dependency theory have been loosely applied to that area, usually in abstract and generalized terms. Likewise, the verification of many assumptions of dependency remains to be demonstrated in terms of the area's historical experience.⁴²

Another scholar has argued beyond both paradigms for the merger of a nonethnocentric theory of development. In Wiarda's opinion:

Not only must we reexamine a host of essentially Western social

40. E.g., Frank, *The Development of Underdevelopment*, in *Latin America: Underdevelopment or Revolution* (A. Frank ed. 1969); Bluestone, *Economic Crises and the Law of Uneven Development*, 3 *Pol. & Soc.* 65-82 (1972); and S. Amin, *Unequal Development* (1976).

41. For an excellent review and critique of the dependency approach, refer to Chilcote, *Dependency: A Critical Synthesis of the Literature*, 1 *Latin Am. Perspectives* 4-29 (1974).

42. R. Chilcote, *Theories of Comparative Politics: The Search for a Paradigm* 312 (1981).

science assumptions but we must also be prepared to accept an Islamic social science of development, an African social science of development, a Latin American social science of development—and to strike some new balances between what is particular in the development process and what does in fact conform to more universal patterns.⁴³

The advancements in scholarship concerning the Third World over the last decade have been commendable, and they can be incorporated into research on natural resource issues. As area studies have expanded, the complexity and diversity of each country in the Third World as well as various localities within each state have received careful scrutiny. Moreover, the steady expansion of the field of political economy has widened the dimension and the scope of political analysis. Finally, the impact of non-state actors on development (or underdevelopment) of the Third World has received closer attention.

Since there is no single theory of development, researchers must become familiar with various theoretical approaches to find an explanation or a combination of explanations that can account for policies concerning deforestation in different countries. One of the primary theories of development, stage theory, grew out of World War II. Proponents of stage theory (for example, Rostow and Organski) believe that foreign aid and technical assistance can enhance conditions in the Third World. Aid provided by Western countries and international organizations can, in time, transform economic and political backward developing nations into vibrant, modern industrialized states. Inherent in this view is that economic and political development takes place in a series of stages, much like it has in the Western world. Rostow, for instance, identifies six stages of development: (1) traditional society, (2) preconditions for take off, (3) take off, (4) drive toward maturity, (5) the age of high mass consumption, and (6) search for quality.⁴⁴ Organski, influenced by Rostow's work, identifies four phases to explain specifically government's role in development: (1) national unification, (2) industrialization, (3) pursuing national welfare, and (4) abundance.⁴⁵

As Table 1 showed, deforestation is most serious in the Third World. Based on Rostow's theory, the deforestation policy issue in developing nations might best fit in the "preconditions for take off" stage (which is characterized by intrusion of advanced countries) or in the "take off" stage (depicted by commercialization of agriculture, expansion of industry, and investment). Production and industrial growth in Brazil, for

43. Wiarda, *Toward a Nonethnocentric Theory of Development: Alternative Conceptions from the Third World*, in *New Directions in Comparative Politics* 145 (H. Wiarda ed. 1985).

44. W. Rostow, *The Stages of Economic Growth: A Non-Communist Manifesto* (1960). Actually, the last stage was added in W. Rostow, *Politics and Stages of Growth* (1971).

45. A. Organski, *supra* note 39.

example, have consistently been much higher than in, say, Indonesia. While deforestation in Indonesia might best fit in the context of "pre-conditions for take off," deforestation in Brazil probably can be placed in the "take off" phase. Using Organski's framework, both countries will tend to fall under "industrialization," where it is the state's responsibility to promote growth.

While Marxist and non-Marxist researchers have criticized stage theory, many developmentalists will probably view deforestation as one more example of the hazards of modernization.⁴⁶ After all, they might argue, the problem exists in both the developed and developing worlds. In cases like Brazil and Indonesia, where there is substantial evidence of state cooperation with prominent industrialists, multinational corporations, and the wealthy landowning class, government corruption more than anything else has contributed to the devastation of forests.

Developmentalists might use Panama, however, to show how a more politically developed system (in comparison to Indonesia) can recognize and avert problems associated with deforestation. For many years Panama has allowed lumber companies to build roads into virgin forests and cut down a few trees. Nomadic subsistence farmers would follow, burn down the remaining trees and brush and plant rice or corn. Once the soil was exhausted, the farmers would sell out to ranchers, who were supported by government loans, and move on to look for better land. This ongoing cycle has resulted in the removal of over 70 percent of the trees in the basin that provides fresh water to operate the Panama Canal. The lake used to supply the Canal with water is slowly filling with soil washed by rain from the steep and barren slopes above it. In 1987 Panama issued a decree outlawing the destruction of any tree older than five years until 1992. It is the toughest forest preservation law in Latin America, and it has been strictly enforced.⁴⁷

Proponents of the orthodox paradigm of development, some of whom do not adhere to stage theory, would argue that deforestation provides important benefits to Third World countries. The practice, they would contend, creates jobs for the poor, stimulates foreign trade, and advances industrial growth. Moreover, it helps raise a nation's standard of living and furthers its political development. From their perspective, defores-

46. For a non-Marxist critique of stage theory, see I. Horowitz, *Three Worlds of Development* (1966). A Marxist critique of stage theory appears in Frank, *supra* note 40.

47. The Panama case, however, is complicated. The government, which once viewed deforestation as a progressive act, has reversed itself with strong support from Panama's military. The military views deforestation as a threat to national security. The issue involves the combined environmental and economic survival of Panama as well as the nationalistic sentiments related to the future control of the canal. See Boudreaux, *Forest Loss Puts Canal in Jeopardy*, *L. A. Times*, June 3, 1987, at A1, col. 1.

tation is a worldwide problem due to increased industrialization in both developed and developing societies and in both capitalist and communist states. China, as a communist state, is an ideal example where replacing trees has become a matter of policy; more trees have been planted there since the 1950s than in any other country.⁴⁸ Sooner or later, technological and scientific advancements, perhaps in the area of genetic research, will ameliorate the problem.⁴⁹

Samir Amin, a well-known scholar within the radical-Marxist paradigm of development, has formulated the notion of unequal development, arguing that development has actually led to *further* underdevelopment in the Third World.⁵⁰ He views capitalism as a world system and contends that both socialist and capitalist countries operate within the same international capitalist economy. As one of the proponents of the center-periphery concept, he maintains that the bourgeoisie of the periphery states have links with the world bourgeoisie. His writings counter stage theory by pointing out that the processes of development are strikingly different in developing states.

Previous government policies concerning forest management practices in the Third World appear to support Amin's contentions by favoring rich, urban elites. Many urban elites prefer to eat beef and according to one study:

Transformation of forest to pasture to produce cheap beef is one of the main causes of deforestation in Latin America. This management option, which is supported by very important economic and political lobbies, has led to the deforestation of nearly one-third of Costa Rica. In Brazil, it could mean the total destruction of tropical forests by 1990.⁵¹

Other studies and reports also have revealed that deforestation has replaced land reform in the Third World.⁵² Obviously, it is easier for government officials to give away forest land than to redistribute existing land held by powerful elites and wealthy families.

Researchers who adopt a Marxist approach to dependency theory argue that multinational corporations (both large and small) and international

48. MacDougall, *supra* note 24, at 43.

49. In Brazil, forests of various Eucalyptus species grown from rooted cuttings by a private pulp firm have revolutionized plantation forestry in the area. This genetic technique has great potential in other developing countries for raising fast growing trees for pulp or wood for fuel. World Resources Institute, *World Resources 1987* (1987).

50. S. Amin, *Accumulation on a World Scale: A Critique of the Theory of Underdevelopment* (1974); S. Amin, *Unequal Development: An Essay on the Social Transformations of Peripheral Capitalism* (1976).

51. Lavelle, *Wasting the Earth*, 9 UNU Work in Progress 8 (November, 1985).

52. Refer to L. Brown et al., *State of the World, 1985* (1985); MacDougall, *Drought, Floods, Erosion Add to Impact of Tree Loss*, L. A. Times, June 19, 1987, at A1, col. 1.

organizations (for example, the World Bank) promote underdevelopment at the periphery.⁵³ They perpetuate underdevelopment in peripheral nations by enhancing their dependence on advanced capitalist states. Those who follow the radical-Marxist paradigm will probably find a great deal of supporting evidence in the case of deforestation. Previous research has shown that export-oriented economies with ties to Western consumer nations and to profit seeking corporations have encouraged increased crop production leading to deforestation. Tobacco farming in East and Central Africa and peanut farming in Senegal are examples of this.⁵⁴ However, there are studies that paint a slightly different picture. For instance, a study of foreign investment in the Indonesian timber sector shows that of the nearly 500 firms involved, only 29 were based in industrialized nations.⁵⁵ This challenges the dependency argument by showing the localized and regionalized nature of the timber industry and its impact on deforestation.

These kinds of findings might also lead researchers to broader theoretical conclusions. They imply that the highly developed West (state and non-state actors alike) does not have an exclusive monopoly over the exploitation of natural resources in developing countries. The more industrially aggressive Third World nations, such as Taiwan, South Korea, and Brazil, employing the combined forces of the coercive state and private entrepreneurship, may have a devastating impact on the environment of other developing nations.

Finally, previous loans by the World Bank to Brazil to finance large development projects resulted in massive deforestation of the Amazon basin. Amid international pressure and severe criticism, the World Bank has scaled down its funding and is working on schemes to replace the loss of natural forests with commercial tree plantations. Recently, the President of the World Bank commented, "If the World Bank has been part of the problem in the past, it can and will be a strong force in finding solutions in the future."⁵⁶ Those applying the orthodox paradigm of development in comparative studies on environmental policy are likely to find supporting evidence in such changes in position by the World Bank (or by other international organizations).

53. E.g., Santos, *The Structure of Dependency*, 60 *Am. Econ. Rev.* 231-36 (1970); Girvan, *Multinational Corporations and Dependent Underdevelopment in Mineral-Export Economies*, 19 *Soc. & Econ. Stud.* 490-526 (1970).

54. A. MacDougall, *supra* note 30, at 19.

55. C. Pearson, *Multinational Corporations, Environment, and the Third World: Business Matters* (1987).

56. MacDougall, *Forest Reclamation: Last Resort After Conservation*, L. A. Times, June 22, 1987, at A15, col. 2. In 1977 the United Nations sponsored the first conference on deforestation. Unfortunately, the conference was ineffective at halting the accelerated cutting of trees. Since then a series of international conferences have addressed the issue and some progress has been made. World Resources Institute, *supra* note 49, at 58, 72.

SUMMARY

Table 2 provides a brief summary of three major theoretical frameworks in comparative politics. Theories of system and state, though not discussed in the case of deforestation, is included in the table. Its relevance to environmental research stems from the grand systemic approach often used to explain overall state-society relations. In fact, American public policy studies have often utilized some form of systems approach developed by scholars such as David Easton.⁵⁷

TABLE 2.
Several Theories of Comparative Politics

<i>Theories of Political Culture</i>	
Political Culture	Culture is defined as a central concept which shapes beliefs and behaviors.
Communication Approaches	Explores the relationship between communication systems and society.
Political Socialization	Determines and analyzes formal and informal agents of socialization.
<i>Theories of Development, Modernization, and Underdevelopment</i>	
Development and Nationalism	Has been employed in relation to Western European, Socialist, and Third World emerging nations. Relates the rise of nationalism to modernization and development.
Political Development	Focuses on political aspects of development as distinct from economic development.
Modernization	Does not make a clear cut distinction between political and economic development; stage theory is one example of a modernization approach.
Underdevelopment and Dependency	The two concepts have been discussed in conjunction with one another as well as separately; both concepts have been used to explain development in the Third World. There are varied approaches employing each concept.
<i>Theories of System and State</i>	
Structural-Functional Approach	Emphasizes systems maintenance, adaptation, and integration.
Systems Concept	Attempts to reach a general theory of politics as a system of behavior regardless of specific differences.
System as State Approach	Employs Marxist analysis, emphasizes class struggle, and includes instrumentalist and structuralist perspectives.

57. D. Easton, *A Framework for Political Analysis* (1965).

Three important points about these frameworks should be made. First, they are not all-inclusive. For instance, in the last decade, a number of studies in the field of political economy have meticulously combined empirical and theoretical approaches. In terms of its enhancement of comparative political theory, the field of political economy is highly promising and can be utilized in natural resource analyses. Second, theoretical approaches within one framework have often crossed over to other frameworks. For example, while the structural-functional approach has appeared in political culture studies, communication approaches have been used in research on modernization. Third, not covered in the summary table are a multitude of sub-sections which have revised or reformulated each framework. For instance, the systems approach has been substantially revised over the past two decades. The same is true for the dependency approach in studies of development and underdevelopment.

It goes without saying that the use of different frameworks and sub-sections will lead the researcher down different paths. This can result in divergent conclusions and sometimes conflicting policy recommendations. The main point is that none of the theoretical frameworks need to fit perfectly in an environmental study. Analyses of natural resource policies may, in fact, prompt the adoption and application of various elements of models.

CONCLUSION

This study attempted to demonstrate how research in comparative public policy can benefit from theories in the comparative politics field. After discussing the problems and benefits of pursuing cross-national studies of environmental policy, the study reviewed research previously done in the area. The failure to apply comparative politics theory in past works was noted. Accordingly, two theoretical approaches from the comparative politics literature were examined and applied to deforestation as an example. In essence, then, this study is suggesting that American and comparative policy investigators integrate theories of comparative politics in their research on environmental issues. The field will greatly enrich itself theoretically in the long run by adopting relatively new concepts such as state-society relations, center-periphery relations, and dependency.

While research on cross-national environmental policy has recently increased, much remains to be done on how developing nations preserve (or squander) their natural resources. The strong pressures to raise capital, industrialize, and emulate the economic growth of the United States and the West have resulted in poor environmental practices in the Third World. Many of these problems, such as deforestation, pose a real and serious danger to the global ecosystem. Low salaries, the absence of labor laws,

lax regulations concerning the safety of employees in the workplace, and little or no enforcement of environmental regulations attract multinational corporations to these countries. Most of the time, profit is the primary motivating force behind the decisions of outside conglomerates to extract trees and minerals. As a result, the world's forests and other natural resources go unprotected.

While it may be easier from a theoretical and methodological standpoint to restrict comparative analysis to Western nations, studies involving Third World and communist countries have the potential of highlighting certain causes and possible solutions previously overlooked. Theories of the state can be an extremely valuable guide in this regard. If important theoretical and methodological difficulties that tend to plague comparative studies between the United States and nonwestern nations can be minimized, the findings from such research can greatly broaden understanding of natural resource issues and suggest alternative policy approaches to addressing these issues.