September 1985

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Recommended Citation
Kilaparti Ramakrishna, The Emergence of Environmental Law in the Developing Countries: A Case Study of India, 12 Ecology L. Q. 907 (1985).

Link to publisher version (DOI)
http://dx.doi.org/https://doi.org/10.15779/Z38GR8H

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The Emergence of Environmental Law in the Developing Countries: A Case Study of India

Kilaparti Ramakrishna*

INTRODUCTION

India is the second most populous country in the world, with almost 700 million people. Covering over 3.2 million square kilometers, it is also the seventh largest nation on Earth. India’s agricultural regions are widely distributed geographically, while its natural resources, such as forests, minerals, and energy resources, are concentrated in certain areas. Thousands of years of cultivation, a century of industrialization, and a phenomenal population increase during the twentieth century have considerably altered the country’s natural environment.

Population growth, urbanization, and industrial and agricultural development underlie the primary environmental problems facing India today. Population growth has created water supply, sewage, and waste disposal problems. The concentration of population and industrial activity in large cities has overburdened municipal sanitation facilities. Intensive application of chemical fertilizers, insecticides, and pesticides used to...
meet the demands of the growing population for agricultural products from a limited area have caused further environmental deterioration.  

Initially, environmental protection was seen by many developing nations, 6 including India, 7 as a goal conflicting with developmental priorities. Some nations even regarded the industrialized nations' recommendations that developing countries adopt environmental policies as a ploy to divert them from achieving their own economic development. 8 The late Indian Prime Minister Indira Gandhi expressed this attitude in 1972 at the United Nations Conference on the Human Environment, 9 when she asked: "How can we speak to those who live in villages and in slums about keeping the oceans, rivers and the air clean when their own lives are contaminated at the source?" 10

In the ensuing decade, India developed a new attitude which recognizes the compatibility, interdependence, and mutually reinforcing nature of environmental protection and economic development. 11 Prime Minister Gandhi articulated this new view in her inaugural address at the Conference of Non-Aligned Nations in 1983 when she stated: "[T]he preservation of the environment is an economic consideration since it is closely related to the depletion, restoration and increase of resources. In

5. For a comprehensive assessment of India's environmental problems, see CENTRE FOR SCIENCE AND ENVIRONMENT, THE STATE OF INDIA'S ENVIRONMENT 1982: A CITIZEN'S REPORT (1982) [hereinafter cited as INDIA'S ENVIRONMENT].


7. See WOODROW WILSON INT'L CENTER FOR SCHOLARS, THE SUMMARIES OF NATIONAL REPORTS IN PREPARATION FOR THE UNITED NATIONS CONFERENCE ON THE HUMAN ENVIRONMENT (1972).

8. See de Araujo Castro, Environment and Development: The Case of the Developing Countries, 26 INT'L ORGANISATION 401 (1972). At the UNCHE, for example, the government of Cameroon rated "development" as an absolute priority "whatever the side effects." See WOODROW WILSON INT'L CENTER FOR SCHOLARS, supra note 7, at 10-11.


10. Prime Minister Gandhi added that "the rich countries may look upon development as the cause of environmental destruction, but to us it is one of the primary means of improving the environment of living, of providing food, water, sanitation and shelter, of making the deserts green and mountains habitable." Times of India (New Delhi), June 15, 1972.

11. In the 1950's and 1960's, "development" encompassed only the economic aspects of growth. The 1970's gave rise to enlarged concepts of development in which environmental impacts were seen, not as a separate sector, but as an inherent aspect of development. This approach was affirmed in the Declaration of Environmental Policies and Procedures Relating to Economic Development, adopted in New York on February 1, 1980, and signed by the International Bank for Reconstruction and Development, the Arab Bank for Economic Development in Africa, the African Development Bank, the Caribbean Development Bank, the Inter-American Development Bank, the Asian Development Bank, the Commission of European Communities/European Development Fund, the Organization of American States, the U.N. Development Programme, and the U.N. Environment Programme. See Talbot, The World Conservation Strategy, in SUSTAINING TOMORROW 3, 14 n.1 (F. Thibodeau & H. Field eds. 1984).
any policy decision and its implementation we must balance present gains with likely damage in the not too distant future . . . .”

Today in India, environmental pollution is a problem of urgent national concern. The Indian government has tried to accommodate both the interests of environmental protection and economic development in its policies. This Article examines this effort and the emergence of environmental law in India. Part I considers Indian federalism and the division of authority between the states and the central government over environmental issues. Part II analyzes the origins and functions of central government administrative agencies with authority over environmental concerns. Part III discusses legislation addressing major environmental issues including water quality, air quality, and the protection of forests and wildlife. Part IV examines the role of the courts in implementing Indian environmental law. The Article serves primarily as a survey of the current state of Indian environmental law. Suggested reforms focus on methods of increasing the role of individual citizens in both the political process and litigation.

I

INDIAN FEDERALISM AND ENVIRONMENTAL LAW

A. Division of Authority Under the Constitution

Legislative and administrative schemes in India typically reflect the underlying structure of the government, especially the tension between the authority of the central government and the individual states. The Indian Constitution, in effect since 1950, provides for a federal republic with a parliamentary form of government. It gives the twenty-two states great autonomy, but vests the ultimate authority in the central government (the “Union” or “center”).

The Constitution sets forth detailed lists enumerating the areas of legislative jurisdiction of the Union (list I—union list) and the states (list II—state list), as well as areas of concurrent jurisdiction (list III—concurrent list). The union list gives Parliament exclusive jurisdiction over


13. Professor Rahmatullah Khan of Jawaharlal Nehru University maintains that the governments of developing countries no longer pose the problem as “environment vs. development” but as “environment and development,” with environmental integrity as a precondition to development. KHAN & GUNDLING, supra note 2, at 3.

14. The Indian Constitution is an extensive document containing 395 articles and ten schedules of definitions and lists. It comprehensively lists and catalogs the rights and responsibilities of the various political entities.

15. These three lists are set out in the seventh schedule of the Indian Constitution. INDIA CONST. art. 246.
97 topics including foreign affairs, defense, the regulation and development of oilfields, and interstate rivers. The state list gives state governments exclusive power over areas such as public health and sanitation, agriculture, water supplies and irrigation, land reform and improvement, and fisheries. Under the concurrent list, both the union government and the states may regulate criminal law and procedure, forests, protection of wild animals and birds, population control and family planning, prevention of cruelty to animals, and many other subjects. A union law regarding a concurrent subject generally prevails over a state law on the same subject, thus providing some administrative uniformity throughout the country.

During the framing of India's Constitution, the central issue debated by the Constituent Assembly was the allocation of power between the national and state governments. Debate over where to locate authority to regulate environmental matters was primarily a manifestation of this more fundamental power dispute. The proponents of a strong center had attempted, unsuccessfully, to transfer virtually all of the entries on the state list to the concurrent list. Pro-center members of the Constituent Assembly were elected in 1946 by the provincial legislative assemblies to draft India's Constitution.
Assembly argued vehemently for retaining topics such as forests and agriculture on the concurrent list, so that the central government could conduct research on an all-India basis, and coordinate the activities of the various states.\textsuperscript{34} The Ministry of Health successfully proposed an amendment to the union list that gave Parliament broader legislative power over the development of interstate rivers.\textsuperscript{35} In support of this amendment, the Ministry argued that the Union must be given the legislative powers necessary to control water pollution because problems such as river pollution by industrial wastes and sewage and diminution of city water supplies by the diversion of water for irrigation could have serious interprovincial consequences.\textsuperscript{36} On the other hand, proponents of a more decentralized federalism feared the coercive effect on the states of giving the center too much power over such topics.\textsuperscript{37}
B. The Forty-second Amendment Act

The Forty-second Amendment Act, passed in 1976, explicitly incorporated environmental protection into the Indian Constitution for the first time. First, article 48A, added to the Directive Principles of State Policy, imposed on "the State" the responsibility to protect the environment: "The State shall endeavour to protect and improve the environment and to safeguard the forests and wild life of the country." Second, article 51A of a new chapter entitled "Fundamental Duties" imposed a similar duty on all Indian citizens: "It shall be the duty of every citizen of India . . . to protect and improve the natural environment including forests, lakes, rivers and wild life, and to have compassion for living creatures."

The Forty-second Amendment Act also added entries to the concurrent list. The Act inserted a new entry, "Population control and family planning," and moved "Forests" and "Protection of wild animals and birds," from the state list to the concurrent list.

Some members of the Indian academic community believe that the Forty-second Amendment gave the central government new powers to protect the environment, powers that the center did not previously possess. Debate over the interpretation of the Forty-second Amendment Act centers on whether the central government's objective in passing the Act was simply to express its willingness to deal with environmental problems, or actually to acquire additional powers necessary to do so. To evaluate these opposing contentions, and to determine to what extent the center's ability to pass environmental legislation is limited by the division of powers among the lists, it is necessary to analyze the extent to which the provisions added by the Forty-second Amendment Act altered the distribution of powers in the original Constitution.

If the central government's intention in passing the Act was only to express its willingness to prevent environmental pollution, the incorporation of Article 48A in the Chapter on Directive Principles of State Policy...
certainly served that purpose. For the first time, the policy of environmental protection was given constitutional status. On the other hand, if the central government's intention was to acquire more powers, then it must be determined what additional powers the government actually gained.

Although article 51A(g) states that "it shall be the duty of every citizen of India . . . to protect and improve the natural environment," no enforcement mechanism is provided. Further, while article 51A(g) establishes a citizen duty, the language of article 48A, that "[t]he state shall endeavour to protect and improve the environment," is significantly weaker. In sum, these two articles do not seem to grant any additional powers to the central government.

Finally, the insertion of new entries in the concurrent list did not by itself give the Union new powers that it did not have previously. The concurrent list gives the Union the upper hand should it decide to legislate on concurrent topics, but moving the forests and wildlife entries from the state list to the concurrent list did not diminish the states' right to make laws. The issue is whether or not union government legislation has preempted state legislation.

C. Central Government Authority Over International Affairs

Article 253, contained in part XI of the Constitution, "Relations Between the Union and the States," provides:

Notwithstanding anything in the foregoing provisions of this Chapter, Parliament has power to make any law for the whole or any part of the territory of India for implementing any treaty, agreement or convention with any other country or countries or any decision made at any international conference, association or other body.

This article, in conjunction with the other constitutional provisions relating to the union government's powers in the area of international relations, enables Parliament to enact laws on virtually any entry con-

46. See supra text accompanying note 42, for the full text of article 51A(g).
47. The Sardar Swaran Singh Committee recommended that Parliament be empowered to enact legislation imposing penalties or punishment to enforce article 51A(g). This recommendation was, however, deleted from the final amendment. See SARDAR SWARAN SINGH COMMITTEE, PROPOSALS 4.
48. Emphasis added. See supra text accompanying note 41, for the full text of article 48A.
49. INDIA CONST. pt. XI, art. 253.
50. These include article 51(c) and union list entries 14 and 15. Article 51(c) reads: "The State shall endeavour to foster respect for international law and treaty obligations in the dealings of organised peoples with one another." Id. pt. IV, art. 51(c). Entry 13 states: "Participation in international conferences, associations and other bodies and implementing of decisions made thereat." Id. seventh sched., list I, entry 13. Entry 14 provides: "Entering into treaties and agreements with foreign countries and implementing of treaties, agreements and conventions with foreign countries." Id. entry 14.
tained in the state list. A close reading of article 253 reveals that, even
without an international obligation, the union government can legislate
on matters enumerated in the state list. As R.B. Looper, writing about
India's treaty-making power, pointed out: "[I]n India . . . parliament has
power to make laws implementing not only international obligations of
the Union arising out of treaties, agreements, and conventions, but also
decisions of any international conference, association, or other body,
although such decisions are not legally binding upon India." Looper
predicted an "inevitable and irresistible invasion of the state list by the
Parliament under article 253 of the Constitution," because of "the vast
range of subjects covered by the conventions, treaties, agreements and
recommendations of various specialized agencies and international con-
ferences" to which India belonged.

The foregoing analysis of the effect of article 253 undermines the
view that the central government does not have the power to enact envi-
ronmental legislation for topics on the state list. The Parliament has
broad powers to pass laws covering the state list entries, even without the
Forty-second Amendment Act.

II
ADMINISTRATIVE AGENCIES AND ENVIRONMENTAL ISSUES

The structure of India's administrative agencies reflects the split be-
tween union and state authority. Some divisions of the civil service pro-
vide India-wide administration, while other administrative services may
be regulated by either the union or state governments, or both. Within
the union government, the Planning Commission is one of the most im-
portant government entities. Although not specifically authorized by the
Constitution, the Commission, formed in 1950, plays a key role in formu-
lating national economic policy. Among other things, it drafts India's
"Five Year Plans," which set targets for the country's economic
growth. While the states have some input into these Plans through the
National Development Council, the Union, through the Planning Com-
mission, has primary authority for national planning.

51. Looper, The Treaty Power in India, in THE BRITISH YEARBOOK OF INTERNATIONAL
LAw 1955-6, at 305-06 (1957).

52. Id. at 306. Looper maintained that the state list entries most susceptible to such an
invasion were prisons, intoxicating liquors, burials, communications, agriculture, fisheries, pro-
tection of wild animals and birds, industries, and the production, supply, and distribution of
goods. Id.

53. For further discussion concerning union-state relations and environmental protec-
tion, see Ramakrishna, What Can and Needs To Be Done for the Prevention and Better Control
of Water Pollution: Does a Fresh Look at the Centre-State Relations Help?, 5 WATER WORLD

54. R. NYPor, supra note 30, at 331-33.

55. See id. at 402-09.

56. See id. at 332-33. The Planning Commission recommends major policy directions in
Though the Planning Commission did not begin to focus explicitly on the issue of environmental degradation until the Fourth Five Year Plan (1969-74), it did address sanitation and public health needs from its inception. The First Five Year Plan (1952-56) initially provided for state water supply and sanitation schemes, but failed to provide the central leadership and direction necessary to implement those schemes. Subsequently, at the request of state governments, the Union Health Ministry created the National Water Supply and Sanitation Program in 1954 as part of its Health Scheme under the Plan. The Program contained specific provisions to assist the states in implementing their urban and rural water supply and sanitation schemes. This program has been carried out through the Public Health Engineering Departments of the individual states under the advice and guidance of the Central Public Health and Environment Engineering Organization (CPHEEO).

During the Third Five Year Plan (1961-66), the Planning Commission established the Committee on Natural Resources to coordinate long-term planning for natural resource development and to make policy recommendations. This committee, now defunct, conducted studies and published reports on a wide range of natural resource issues.

The government's increasing concern with environmental problems culminated in the Fourth Five Year Plan (1969-74), which for the first time explicitly articulated the need for integrating environmental considerations into economic development planning. A passage from the Plan, entitled "Quality of Environment," acknowledged the interdependence of living things and the environment, and then stated:

Planning for harmonious development recognises this unity of nature and man. Such planning is possible only on the basis of a comprehensive appraisal of environmental issues, particularly economic and ecological. There are instances in which timely specialised advice on environmental aspects could have helped in project design and in averting adverse effects on the environment, leading to loss of invested resources. . . . It is particularly important that long-term basic considerations should prevail over short-term commercial considerations, the [sic] social costs and benefits
be used as the yardstick rather than private gains and losses.\textsuperscript{62}

The Plan noted, however, that there was "no point in the structure of Government where the environmental aspect receives close attention in an integrated manner."\textsuperscript{63} Therefore, to bring about greater coherence and coordination in environmental policies and programs, India established a National Committee on Environmental Planning and Coordination (NCEPC) in 1972.\textsuperscript{64} During the nine years of its existence, NCEPC functioned as a central advisory body for environmental management issues.\textsuperscript{65}

The Sixth Five Year Plan (1980-1985) also accorded special significance to environmental issues.\textsuperscript{66} The Plan proposed spending 400 million rupees on various environmental management programs and organizations.\textsuperscript{67} Moreover, perceiving the need for a comprehensive evaluation of administrative and legislative approaches to environmental protection, the government of India\textsuperscript{68} created the blue-ribbon Tiwari Committee, in 1980.\textsuperscript{69} The Committee recommended the creation of a Department of Environment (DOE) under the direct charge of the Prime Minister.\textsuperscript{70}

The DOE was established November 1, 1980.\textsuperscript{71} DOE's functions

\begin{itemize}
  \item \textsuperscript{62} Id. at 49.
  \item \textsuperscript{63} Id.
  \item \textsuperscript{64} See \textit{INDIA'S ENVIRONMENT}, supra note 5, at 177. In 1981, NCEPC became a division of the Department of Environment and was renamed the National Committee on Environmental Planning (NCEP). \textit{Id}.
  \item \textsuperscript{65} NCEPC's tasks included:
    \begin{itemize}
      \item Coordinating environmental and economic policies, and reviewing development activities from an environmental perspective.
      \item Reviewing government policies and programs which significantly affect environmental quality.
      \item Recommending legislative and regulatory changes.
      \item Promoting environmental education in schools and increasing public awareness of environmental problems.
      \item Working with the United Nations and other international agencies on global environmental issues.
    \end{itemize}
  \item \textsuperscript{66} See \textit{INDIA'S ENVIRONMENT}, supra note 5, at 177.
  \item \textsuperscript{67} See \textit{id}. at 181.
  \item \textsuperscript{68} The President of India, in his address to the Joint Session of Parliament on January 23, 1980, referred to the need to set up a specialized machinery with adequate powers to incorporate measures to maintain ecological balance in all planned development. \textit{DEP'T OF SCI. \\ & TECH., GOV'T OF INDIA, RES. NO. 1/4/80-ENV.} (Feb. 29, 1980).
  \item \textsuperscript{69} Id. See also \textit{INDIA'S ENVIRONMENT}, supra note 5, at 177. The committee was named after its founder, N.D. Tiwari, who was at that time the Deputy Chair of the Planning Commission.
  \item \textsuperscript{70} \textit{DEP'T OF SCI. \\ & TECH., GOV'T OF INDIA, REPORT OF THE [TIWARI] COMMITTEE FOR RECOMMENDING LEGISLATIVE MEASURES AND ADMINISTRATIVE MACHINERY FOR ENSURING ENVIRONMENTAL PROTECTION} para. 4.7-8 (1980) [hereinafter cited as \textit{TIWARI COMMITTEE REPORT}]. The primary role assigned to the new Department was that of a "watchdog," to study and bring to the attention of government and Parliament instances, causes, and consequences of environmental degradation in all sectors. \textit{Id}. at paras. 4.7-.9.
  \item \textsuperscript{71} \textit{INDIA'S ENVIRONMENT}, supra note 5, at 177.
\end{itemize}
include environmental appraisal of development projects, direct administrative responsibility for pollution monitoring and regulation, conservation of critical ecosystems designated as biosphere reserves, and conservation of marine ecosystems.\textsuperscript{72} The Department has divided its functions into several administrative divisions.\textsuperscript{73} In addition to its important role in safeguarding the environment, DOE has helped to mobilize public opinion in favor of environmental protection.\textsuperscript{74}

Under the DOE, the National Committee on Environmental Planning (NCEP)\textsuperscript{75} assumed coordination of environmental policy. In addition to serving as an environmental policy "think tank," NCEP's duties also include preparing an annual "State of the Environment" report, formulating guidelines for preparation of environmental impact statements, and organizing public hearings and conferences on environmental issues.\textsuperscript{76}

The Indian government has also established institutes which conduct research and provide information to national, state, and local administrative agencies which deal with environmental problems. For example, the Indian Standards Institute, through its Environmental Protection Advisory Committee, sets acceptable pollution levels. The Institute then provides guidance to different agencies in an attempt to coordinate environmental protection efforts.\textsuperscript{77} In 1978 and 1979, the National Environmental Engineering Research Institute established air pollution monitoring stations in major Indian cities and published a report of its findings.\textsuperscript{78} These research programs attest to the increasing sophistication of India's approach to solving environmental problems.

III

LEGISLATION CONCERNING SPECIFIC ENVIRONMENTAL ISSUES

A. Water Quality

India entered a new era in the field of environmental legislation with

\textsuperscript{72} Id.

\textsuperscript{73} The following divisions either currently exist or have been proposed: 1) pollution control, 2) environmental assessment, 3) living natural resources conservation, 4) ecodevelopment, 5) environmental research promotion, 6) environmental training, education, and awareness, 7) environmental law, 8) society-environment interactions, 9) coordination-liaison with state governments, 10) environmental information, 11) international cooperation, 12) administration, and 13) finance. See generally DEP'T OF ENV'T, GOV'T OF INDIA, PROFILE (1983).


\textsuperscript{75} The replacement of NCEPC with NCEP, see supra note 64, was another of the Tiwari Committee's recommendations. See TIWARI COMMITTEE REPORT, supra note 70, para. 4.11.

\textsuperscript{76} DEP'T OF ENV'T, GOV'T OF INDIA, RES. NO. F.1/8/81-ENV. 4-5 (1981). NCEP was constituted for a two-year term, beginning April 1, 1981. Id. at 5.

\textsuperscript{77} 27 INDIAN STANDARDS INST. BULL. 371.

\textsuperscript{78} See INDIA'S ENVIRONMENT, supra note 5, at 73-74.
the passage of the Water (Prevention and Control of Pollution) Act of 1974. This Act represents the nation's first comprehensive program for dealing with an environmental problem. Many earlier pieces of legislation, still in effect, attempted to regulate various aspects of water quality, but their approach was piecemeal and unsuccessful. A short review of some earlier national and state legislation, although their provisions are vague and poorly enforced, is useful before examining the Water Act of 1974 in detail.

I. Water Pollution Legislation Prior to the Water Act of 1974

The earliest legislation concerning water pollution is the Shore Nuisance (Bombay and Kolaba) Act of 1853. This Act authorized the Collector of Land Revenue in Bombay to order the removal of any nuisance below the high-water mark in Bombay harbor. Another early law, the Oriental Gas Company Act of 1857, attempted to regulate all water pollution produced by only one enterprise, the Oriental Gas Company. The Act imposed fines on the Company and gave a right of compensation to anyone whose water was "fouled" by the Company. Private property rights of riparian owners are guaranteed by the Easements Act of 1882. The Act protects owners against "unreasonable" pollution by upstream users, against "material" diversion or diminishment of streams, and against "material" draining of lakes and ponds.

Several other pre-independence pieces of legislation touch on water pollution. These include laws prohibiting the use of poisons to kill fish, regulating the discharge of oil into port waters, and prohibiting the poisoning of water in forests.

Two post-independence laws mandate regulation of water pollution

80. INDIA'S ENVIRONMENT, supra note 5, at 30.
82. Id. § 2.
83. Act V of 1857, 15 INDIA A.I.R. MANUAL (3d ed. 1973). The Act, which originally encompassed Oriental Gas Company activities only in Calcutta, was extended to include operations throughout India in 1867. Act XI of 1867, id.
84. Act V of 1857, id. preamble.
85. Id. §§ 15-17.
87. Id. § 7, illus. (f).
88. Id. § 7, illus. (h).
89. Id.
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by the states. The Factories Act of 1948 requires all factories to make "effective arrangements" for waste disposal, and empowers state governments to make rules implementing this broad directive. Five states have made rules for the disposal of factory waste under this Act. The River Boards Act of 1956 provides for the creation of river boards for the regulation and development of interstate rivers and river valleys. Section 4(1) of the Act empowers the central government to set up river boards upon the request of the state. While in theory the boards have broad powers to prevent pollution, their main function in fact is to advise the state governments. In 1961, some states began to establish river boards on the Narmada, the Krishna, and the Godvari rivers. In 1964, however, there was a change in policy, and the idea of establishing the boards was abandoned.

Some states have also enacted water pollution acts. The Maharashtra Prevention of Water Pollution Act of 1970, for example, emphasizes the negotiation of effluent standards with industry. Uttar Pradesh and Tamil Nadu have both established water boards to protect the drinking water supply.

The Indian Penal Code includes provisions aimed specifically at water pollution as well as general anti-pollution provisions. The Code imposes a fine or prison term on "whoever voluntarily corrupts or fouls the water of any public spring or reservoir, so as to render it less fit for the purposes for which it is ordinarily used." A fine or prison term is also imposed for negligent acts likely to spread infection or disease dangerous to life. In addition, the Code proscribes the handling of poisonous substances in such a manner as to endanger life or cause injury. Finally, pollution of a kind not specified in the Code may be punishable as a public nuisance, subjecting the polluter to a fine.

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94. Id. § 12(1).
95. Id. § 12(2).
97. Id. § 4(1).
98. Id. § 14.
99. Id. § 13.
103. See India's Environment, supra note 5, at 109.
104. 2 India Pen. Code § 277 (2d ed. 1974).
105. Id. § 269.
106. Id. § 284.
107. Id. § 290.
2. The Water Act of 1974

The history and the preamble of the Water Act of 1974 indicate that only state governments can enact water pollution legislation.\(^{108}\) The Water Act was approved by the central government only after a history of lengthy discussion and subsequent approval at the state level. In 1965, the central government drafted and circulated to the states a water pollution control bill on the recommendation of two advisory committees. By 1969, six states had adopted enabling resolutions, and a bill was introduced in Parliament pursuant to article 252(1) of the Constitution. After significant revisions, the Water Act was passed by Parliament,\(^{109}\) The President approved the Act in 1974.

By the time the Water Act came into force, twelve of the states had passed enabling resolutions, and the remaining states approved the Act soon thereafter. The Water Act is thus a milestone in the growing Indian consensus that water pollution is a problem of national scope.

a. Framework of the Act

As the Act's full title suggests, it is designed to prevent future and control existing water pollution. The Act is comprehensive in its coverage, applying to streams (including those temporarily dry), inland waters (whether natural or artificial), subterranean waters, and sea or tidal waters.\(^{111}\) Notably, the Act is also an enabling law. It provides for the establishment of state and central water boards and gives wide powers to these boards, without imposing any rules, regulations, or standards.\(^{112}\) These boards can sue and be sued, and have full time staff.\(^{113}\) Agricultural, fishing, industrial, and trade interests are represented on the boards.\(^{114}\) Companies or corporations owned, controlled, or managed by the central and state governments are also represented.\(^{115}\)

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108. The preamble of the Act states that the Parliament has no power to make laws for the states with respect to water pollution control, except as provided in articles 249 and 250 of the Constitution. 1974 Water Act, supra note 79, preamble.

109. Article 252(1) states:
   If it appears to the Legislatures of two or more States to be desirable that any of the matters with respect to which Parliament has no power to make laws for the States except as provided in articles 249 and 250 should be regulated in such States by Parliament by law, and if resolutions to that effect are passed by all the Houses of the Legislature of those States, it shall be lawful for Parliament to pass an act for regulating that matter accordingly, and any act so passed shall apply to such States and to any other State by which it is adopted afterwards . . . by each of the houses of the legislature of that state.

110. See generally RAJYA SABHA SECRETARIAT, JOINT COMMITTEE ON THE PREVENTION OF WATER POLLUTION BILL 1969 REPORT.

111. 1974 Water Act, supra note 79, preamble.

112. Id. § 2(j).

113. See id. §§ 3(3), 4(3).

114. Id. §§ 3(2)(d), 4(2)(d).

115. Id. §§ 3(2)(e), 4(2)(e).
The central board may advise the central government on matters concerning water pollution, coordinate activities among the state boards, carry out or sponsor investigation and research relating to water pollution, and educate the public on water pollution problems.\textsuperscript{116} The central board may also organize training programs in connection with prevention and control of water pollution\textsuperscript{117} and establish or recognize laboratories to help the board perform its function.\textsuperscript{118} The central board acts as the state board for the Union Territories.\textsuperscript{119} The central board's functions also include: planning a comprehensive program for the prevention and control of water pollution; inspecting sewage or trade effluents; developing economical and reliable methods of treatment of sewage and trade effluents; and developing efficient methods of disposal of sewage and trade effluents.\textsuperscript{120}

The central board is bound only by the directions of the central government. The state boards, however, are bound by the directions of both the central board and the state government. When a direction given by the state is inconsistent with the direction given by the central board, the matter is referred to the central government for decision.\textsuperscript{121}

The state water boards control new sewage and industrial effluent discharges by approving or rejecting applications for consent to discharge.\textsuperscript{122} Any person discharging sewage or industrial effluent before a state water board was constituted is given three months from the date the water board is constituted to apply for consent to discharge.\textsuperscript{123} The state water boards also minimize water pollution by advising state governments on appropriate locations for new industry.\textsuperscript{124}

\textbf{b. Enforcement Problems Under the Act}

Several features of the Act severely limit the effectiveness of the water boards. First, although the Act expressly confers powers and functions on the water boards, it is silent on the matter of funding. Section 37 simply provides that the state government may make such contributions to its state board as it deems necessary to enable the board to perform its...
functions under the Act. As long as there are insufficient funds, it is unreasonable to expect the state boards to enforce the Act effectively.126

Second, enforcement of the Act is hindered by the requirement that to violate the Act, the polluter must have “knowledge.” Under section 24(1)(a), it is an offense to knowingly cause or permit to enter into any stream any matter which may substantially aggravate pollution.127 Under this provision, the prosecution must prove knowledge on the part of the polluter before the polluter can be held responsible; negligent, unknowing polluting of a stream is not covered. In contrast, the Prevention of Food Adulteration Act of 1954 incorporates a strict liability standard; knowledge is not a necessary element of an offense committed under this Act.128 Comparing these two provisions, it is difficult to understand why the legislature inserted the word “knowingly” in the Water Act. Whatever the reason, this particular provision undermines the avowed objectives of the Act.

Third, the water boards have no authority to deal directly with erring industries, but instead must seek judicial remedies.129 The court procedures are time consuming and prevent quick corrective action.130

Fourth, injunctive relief is unavailable under the Water Act. Even though the company management can be punished with imprisonment and a fine if found guilty of polluting,131 there is no provision to enable a court to direct any industry to close down. Unfortunately, closure is often the only adequate weapon for controlling pollution. For example, the Zhuari Agro Chemical company, located in the state of Goa, refused repeated government requests to treat its effluent water. The resulting pollution killed fish, cattle, and coconut trees. Popular protest against the company and political pressure resulted in a shutdown ordered by the District Magistrate under a public nuisance act. Two years of destructive pollution, however, occurred before the shutdown. Within two months of the shutdown, the Company undertook measures to treat the effluent water, and the factory was allowed to resume its operation.132

125. Id. § 37.
126. For example, the Gujarat State Board in its report for the period 1974-77 appropriately complained of limited resources as a constraint. The West Bengal State Board pointed out that the total grant put at its disposal by the government in the first year of its operation hardly even covered the traveling expenses of the chair and member-secretary of the Board.
129. 1974 Water Act, supra note 79, § 33.
130. For example, the Andhra Pradesh State Water Board has requested that the state government empower the Board to cut off water and power supply to industries that pollute. The Board asserted that remedies existing under the Water Act are time consuming and that the penal provisions are too stringent, which makes courts reluctant to enforce them. Andhra Pradesh State Water Board Res. No. 120 (Mar. 8, 1979).
131. 1974 Water Act, supra note 79, § 47.
132. INDIA'S ENVIRONMENT, supra note 5, at 26.
To provide state governments with a more effective method for fighting pollution, water boards should be empowered to order closure of the offending industry for a fixed period.

Section 32 of the Water Act empowers the State Boards to take some emergency measures. That section, however, applies only when it appears to the state board that polluting matter is present in any stream or well due to any accident or other unforeseen act or event. In such an event, the boards are empowered to remedy the pollution or order immediate restraints on the discharging factory.

Fifth, there is no provision in the Water Act that shifts the burden of proof from the prosecution to the polluter, a provision generally found in other acts such as the Industries (Development and Regulation) Act of 1951. As a result, the burden of proof under the Water Act lies on the prosecution, which must establish that the effluents in a given case endanger public safety. Establishing this finding is often expensive and difficult, a heavy burden when prosecutorial resources are limited.

Finally, section 49(1) of the Water Act provides that "no court shall take cognizance of any offence under this Act except on a complaint made by or with the previous sanction in writing of the State Board ..." Thus, there is no private right of action. A private right coupled with a state right of action would significantly strengthen the Act. These enumerated problems make implementation of the Act difficult, and water pollution remains a severe problem in India.

c. Funding the Water Boards: The Water Cess Act of 1977

The central government passed the Water Cess Act in 1977 to help meet the expenses of the central and state water boards. The tax collected under this Act is payable by every person carrying on any specified industry and by every local authority which uses water for pur-
poses specified in the Act.\textsuperscript{141} Incentives in the form of rebates of seventy percent of the tax payable under the Act are given to those who install any plant for the treatment of sewage or trade effluent.\textsuperscript{142} The proceeds of the tax are credited to the consolidated fund of India.\textsuperscript{143} The central government, after deducting the expenses of collection, may pay to the central board and every state board such sums of money as it deems necessary to enforce the provisions of the Water Act.\textsuperscript{144}

The Water Cess Act was passed by the central government without state approval and gives the central government rulemaking authority over substantial aspects of pollution control.\textsuperscript{145} This significant increase in centralized power led many industries to challenge the Act in the Indian courts.\textsuperscript{146} The courts ruled, however, that the central government did not exceed its legislative power in enacting the Water Cess Act of 1977. The courts saw the act as merely a tax law and not as an attempt by the central government to increase its authority over substantial environmental issues.\textsuperscript{147}

In addition, the provision listing the industries and activities subject to the tax\textsuperscript{148} has generated considerable litigation. Many industries have contended that they were not covered by those lists, and have drawn subtle distinctions to avoid falling within the Act.\textsuperscript{149} The existence of these suits suggests that Parliament should have included all industrial activities in the Water Act. Also, the present language of the Water Cess Act creates the erroneous impression that the tax collected from the polluting industry is a fine, which was never the intention of the legisla-

\textsuperscript{141} Id. \S 3. Column I of schedule II of the Act specifies the purposes for which the water is consumed as: (i) industrial cooling, spraying in mine pits or boiler feed; (ii) domestic purpose; (iii) processing whereby water gets polluted and the pollutants are easily biodegradable; (iv) processing whereby water gets polluted and pollutants are not easily biodegradable and are toxic. \textit{Id.} sched. II.

\textsuperscript{142} Id. \S 7.

\textsuperscript{143} Id. \S 8. The Indian government keeps all receipts and disbursements under two separate headings, the consolidated fund and the public account. The consolidated fund contains all revenues received, loans raised, and money received in repayment of loans by the central government. No money can be withdrawn from the fund except under the authority of an act of Parliament. The public account contains all other receipts, such as deposits, service funds, and remittances. Disbursement from the public account does not require an act of Parliament. \textit{India} 1983, \textit{supra} note 1, at 182.

\textsuperscript{144} Water Cess Act, \textit{supra} note 138, \S 8.

\textsuperscript{145} See id. \S\S 7, 17(1).


\textsuperscript{147} See, e.g., Gwalior Rayon Silk, 1983 A.I.R. (Kerala) at 111.

\textsuperscript{148} Water Cess Act, \textit{supra} note 138, \S 2(c), sched. I.

\textsuperscript{149} See, e.g., Gwalior Rayon Silk, 1983 A.I.R. (Kerala) at 110 (held that defendant industry, which made rayon, was a chemical industry and, therefore, was a specified industry under section 2(c) of the Act); see also \textit{India's Environment}, \textit{supra} note 5, at 30.
Although the Water Act is a significant advance toward comprehensive environmental protection, the loopholes within the Act weaken its enforcement.

d. The Water Act Amendments of 1978

Parliament amended the Water Act in 1978 in an effort to strengthen the implementation powers of the boards. The legislative assemblies of only three states passed resolutions approving the Amendments. Moreover, the resulting Amendment Act failed to bring about any changes likely to provide improved implementation; the amendments are largely cosmetic.

Numerous commentators, including the Tiwari Committee, have since proposed additional amendments to the Water Act. These proposals include incorporating a strict liability standard into the Act; authorizing the boards to take certain steps to prevent pollution without having to invoke the jurisdiction of the courts; authorizing the board to enhance the penalty for polluting; and establishing special courts for cases brought under the Act.

These recommended amendments would greatly strengthen the implementation powers of the state boards. If the central government follows the usual procedure of circulating a draft for state approval, though, passage will take a long time. Rather than having the central government circulate a draft, the state boards should persuade their state governments to prepare a draft amendment for presentation to the central government. The central government is more likely to be attentive when a state legislature makes a request than when the same request is made by the state water boards.

Although the Water Act was passed more than a decade ago, its implementation has been fairly ineffective and its coverage less than comprehensive. Lack of a private right of action and insufficient funding of the water boards have hindered enforcement of the Act. Subsequent amendments did little to strengthen the Act because they were cosmetic and not adopted by most states. Further amendments to regulate more industries under the Act and to allow the boards to act directly against polluters would help relieve India's severe water pollution problems.

150. Water Cess Act, supra note 138; Statement of Objects and Reasons, Gazette of India, pt. II, § 2, ext. at 564 (Nov. 11, 1977). The Statement of Objects and Reasons is the official government explanation of the contents and scope of a legislative act.
152. Id. preamble.
153. See supra notes 69-70 and accompanying text.
154. See India’s Environment, supra note 5, at 181.
Although India has had air pollution laws on the books for the last 80 years, Parliament has only recently made a concerted attempt to enact comprehensive legislation for the prevention and control of air pollution. The earlier laws encountered a variety of problems, including the absence of standards, inadequate monitoring and surveillance capabilities, weak enforcement agencies, and ill-informed public opinion.

To remedy the various problems inherent in the earlier existing laws, the union government appointed an Expert Committee on Air Pollution in 1970 to draft an enforceable air pollution and control bill. The resulting Air (Prevention and Control of Pollution) Act was passed in 1981, "to provide for the prevention, control and abatement of air pollution . . . ."

1. Framework of the Air Act

The Air Act's framework is similar to that of the Water Act. The Air Act establishes both a central and state air boards. The central board's responsibilities include advising the central government, coordinating the state boards' activities, establishing air quality standards, and creating or recognizing laboratories for the study of air pollution. State boards have the power to advise state governments, to inspect industrial plants and give orders necessary for air pollution control, and to develop comprehensive air pollution control programs.

The union government's view is that there should be an integrated

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156. See Some Aspects of Environmental Degradation and Its Control in India, supra note 4, at 55-60. Moreover, the smoke nuisance acts are limited in scope and outdated in the modern context of diverse industrial stack emissions. Regional Seminar on Air Pollution Control, U.N. Doc. WHO/SEA/Env.San./18, at 42 (1978).


159. For a discussion of the Water Act, see supra notes 111-24 and accompanying text.

160. Air Act, supra note 158, ¶¶ 3, 4.

161. Id. § 16(2)(a).

162. Id. § 16(2)(c).

163. Id. § 16(2)(h).

164. Id. § 16(3).

165. Id. § 17(1)(b).

166. Id. § 17(1)(e).

167. Id. § 17(1)(a).
approach to all environmental problems, particularly pollution. Therefore, the government has proposed that the central board constituted under the Water Act also perform the functions of the central board under the Air Act. The government also proposed that the state boards constituted under the Water Act perform the functions of the state boards for air pollution prevention, control, and abatement. The consolidation of the air and water boards, however, is not easily implemented. The Air Act is nationwide and compels all states to set up state air boards. In contrast, the Water Act was enacted pursuant to article 252 of the Indian Constitution and gives the states discretion to set up state water boards. Not all states have established water boards.

2. Federalism Issues: Article 253 and the Air Act

The Air Act represents the Indian Parliament's first implementation of environmental legislation using article 253 of the Indian Constitution. Article 253 empowers Parliament to make laws implementing treaties, agreements, conventions, or decisions made by international conferences. In the Air Act, Parliament explicitly refers to the principle of preserving the natural resources of the Earth enunciated at the United Nations Conference on the Human Environment. The Act then states that it represents an implementation of the decisions made at the Conference.

In the absence of article 253, Parliament's authority to legislate on air quality issues is questionable. Parliament enacted the Air Act, unlike the Water Act, without the consent of the states. Moreover, air pollution is not a subject specified on any of the constitutional lists. Parliament does have residuary power to legislate on matters not included on the state list or concurrent list, but the residuary power is ill-defined and controversial. Parliament does, however, have explicit constitutional authority to participate in international conferences and implement the decisions made at the conferences and to enter into and implement

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169. Air Act, supra note 158, § 1(2).
170. See supra note 109 and accompanying text.
171. See India's Environment, supra note 5, at 82. As of 1982, six states had not established water boards. Id.
172. See supra notes 49-53 and accompanying text.
173. Air Act, supra note 158, preamble.
175. Air Act, supra note 158, preamble.
176. See supra notes 169-70 and accompanying text.
177. For a discussion of the division of state and federal powers under the Indian Constitution, see supra notes 14-30 and accompanying text.
178. India Const. seventh sched., list I, entry 97.
179. Id. entry 13.
treaties and agreements with foreign countries. Parliament, therefore, derives the authority to legislate the Air Act from specific constitutional provisions read with article 253. The central government can use this power to legislate on many other environmental issues in the future.

C. Protection of Wildlife and Forests

1. Early Legislation

The first Indian legislation protecting wildlife was limited to specific areas and particular species. For example, in 1873, Madras passed the first wildlife statute, which protected only wild elephants. Other states soon passed similar legislation, and in 1879 the central government passed the Elephants' Preservation Act. In 1912, the central government passed a broader Wild Birds and Animals Protection Act, which many states later incorporated.

These statutes related primarily to regulation of hunting and did not regulate taxidermy or trade in wildlife and wildlife products, both major factors in the decline of Indian wildlife. Despite these laws, wildlife eradication continued and many species became extinct.

2. The Wild Life Protection Act of 1972

In the 1950's, the central government recognized the need for comprehensive legislation to conserve wildlife. As early as 1952 the Central Board for Wildlife, an advisory body to the central government, recommended that there should be unified legislation for wildlife conservation in India. At the time, forests and wildlife were under state control and the central government could not act unilaterally but rather had to obtain state approval of proposed legislation as provided in article 252 of the Constitution. Parliament passed the Wild Life Protection Act in

180. Id. entry 14.
182. See, e.g., The Bengal Cruelty to Animals Act of 1869, 1 WEST BENGAL CODE (1958).
186. See INDIA'S ENVIRONMENT, supra note 5, at 165-73.
187. Certain Indian legislation and official documents separate the word "wildlife" into two words, i.e. wild life. When referring to such legislation and documents this Article uses the original term.
188. Saharia & Pillai, Organisation and Legislation, in WILDLIFE IN INDIA 66 (V. Saharia ed. 1982).
189. See supra note 109. In 1976 forests and the protection of wild animals were transferred from the state list to the concurrent list of the Indian Constitution by the Forty-second Amendment Act. See supra notes 38-44 and the accompanying text.
1972 after eleven states had adopted the Act by resolution. As of 1983, all the states had adopted the Act, except Jammu and Kashmir (a single state) which has passed similar state legislation.

The Wild Life Act provides for state wild life advisory boards, wild life wardens to administer the Act, regulations for the hunting of wild animals, the establishment of national parks, game reserves, and sanctuaries, and the regulation of trade and commerce in wild animals, animal articles, and trophies. The Act also provides for the prevention and detection of violations. The Act divides Indian wildlife into five schedules. Schedule I lists rare and endangered species, which are protected throughout the country. Schedule II lists several game species that require special protection. Schedule III contains big game, and Schedule IV lists small game. Vermin are listed on Schedule V.

3. Administrative Consolidation of Forest and Wildlife Conservation

India's national forest policy, declared in 1952, emphasizes the inclusion of wildlife protection within the field of forest management. The Wild Life Act mandates that the chief conservator of state forests shall be a member ex officio of the state wild life advisory board. Most states have implemented the Act by establishing Wildlife Wings within their forest departments. The Chief Wildlife Warden, a position specified in the Act, is often made an Additional or Deputy Chief Conservator of Forests in the state forest department. In many states, wildlife wardens are also divisional forest officers. In addition, in most states the Wildlife Wings of the forests departments manage zoological

191. Id. § 1(2).
193. Wild Life Act, supra note 190, ch. II.
194. Id. ch. III.
195. Id. ch. IV.
196. Id. ch. V.
197. Id. ch. VI.
198. Id. § 9(1), sched. I.
199. Id. § 9(2), (5), sched. II.
200. Id. § 9(5), sched. III.
201. Id. § 9(5), sched. IV.
202. Id. sched. V.
203. See INDIA 1983, supra note 1, at 254. The policy also advocated the control of agricultural development in forests and recommended that 33% of India's land should be preserved as forest. Id.
204. Wild Life Act, supra note 190, § 6(d).
205. Saharia & Pillai, supra note 188, at 53.
206. Wild Life Act, supra note 190, § 4(a).
207. Saharia & Pillai, supra note 188, at 153.
208. Id. at 53.
parks. Foresters also plan and manage most of India’s zoos.\textsuperscript{209}

Administrative organization in the central government also combines wildlife conservation and forest management. The Forestry Division, within the Ministry of Agriculture, is headed by an Inspector General of Forests who is also the Chief Executive of Forestry and Wildlife, and a Joint Secretary is responsible for forests and wildlife.\textsuperscript{210} The central government has combined training in forest management and wildlife protection by establishing a Directorate of Wildlife Environmental Research and Education within the national Forest Research Institute and Colleges at Dehra Dun, Uttar Pradesh. This Directorate conducts a postgraduate course in wildlife management for senior level foresters.\textsuperscript{211}

4. \textit{Enhancement of the Central Government’s Role}

In 1976, the Forty-second Amendment Act transferred forests and protection of wildlife from the state list to the concurrent list of the Constitution.\textsuperscript{212} This transfer gave the central government the power to act directly to protect forests and wildlife. The Central Board for Wildlife, redesignated the Indian Board for Wildlife (IBWL), became the primary framer of wildlife conservation policy in India. The IBWL’s power was enhanced further in the 1980’s when Prime Minister Indira Gandhi became its Chairperson.\textsuperscript{213}

The IBWL has about seventy members, including government officials and eminent naturalists.\textsuperscript{214} The Board reviews the schedules of the Wild Life Act\textsuperscript{215} and recommends amendments.\textsuperscript{216} The Board also recommends areas for the establishment of national parks, sanctuaries, and zoological parks.\textsuperscript{217} As of 1983, India had forty-five national parks, 211 wildlife sanctuaries, and thirty-five zoological parks.\textsuperscript{218} The IBWL has promoted public interest and education in wildlife.\textsuperscript{219} The Board also advises the central government on trade policies involving wildlife and wildlife products. On recommendation of the Board, India exports a very restricted number of species and their products under strictly enforced quotas.\textsuperscript{220}

The central government has also assumed a greater role in forest

\begin{thebibliography}{9}
\bibitem{209} Id. at 54.
\bibitem{210} Id. at 53.
\bibitem{211} Id. at 56.
\bibitem{212} See supra notes 38-44 and accompanying text.
\bibitem{213} Saharia & Pillai, supra note 188, at 54.
\bibitem{214} Id. at 65.
\bibitem{215} See supra notes 198-202 and accompanying text.
\bibitem{216} Saharia & Pillai, supra note 188, at 66.
\bibitem{217} Id. at 66-67.
\bibitem{218} \textit{India} 1983, supra note 1, at 5.
\bibitem{219} Saharia & Pillai, supra note 188, at 67-68.
\bibitem{220} Id. at 69.
\end{thebibliography}
conservation since the Forty-second Amendment Act. In 1980, Parliament legislated a Forest Conservation Act without prior approval of the states.\textsuperscript{221} This Act prevents the states from removing land from reserved forest status\textsuperscript{222} without prior approval of the central government.\textsuperscript{223} The Act also prohibits the states from approving any breaking up or clearing of forest land for any purpose other than reforestation without central government approval.\textsuperscript{224}

The IBWL has also assumed a greater role in forest management. An informal group of the Board recently reviewed a new draft National Forest Policy. The informal group revised the draft by reordering its priorities to emphasize conservation rather than exploitation of forest resources.\textsuperscript{225}

India's participation as a party to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)\textsuperscript{226} is a factor, in addition to the Forty-second Amendment Act, that has increased the role of the central government in wildlife protection. CITES provides for an international system of licensing and legal procurement certificates to control trade in designated species. To implement CITES, India appointed the Inspector General of Forests and the Director of Wildlife Preservation as management authorities. India's scientific authorities under CITES include the Director of the Zoological Survey, the Director of the Botanical Survey, and the Director of the Central Marine Fisheries Institute. In addition, Delhi, Bombay, Madras, and Calcutta are the only ports for the export of wildlife and wildlife products. This export trade is closely controlled by the central government.\textsuperscript{227}

5. **Biosphere Reserves**

India is a member of the International Co-ordinating Council of the Programme for Man and the Biosphere (MAB).\textsuperscript{228} MAB is a worldwide program designed to study the structure and functions of ecosystems and the impact of human intervention. The program seeks to conserve representative ecological areas known as biosphere reserves and to preserve


\textsuperscript{222} The Indian Forest Act of 1927 empowered states to designate state owned forest land as reserved forest and to regulate the use of such forests. 1927 Forest Act, supra note 92, §§ 3, 28, 29, 32.

\textsuperscript{223} Forest Conservation Act, supra note 221, § 2(i).

\textsuperscript{224} Id. § 2(ii).

\textsuperscript{225} Saharia & Pillai, supra note 188, at 69-70.


\textsuperscript{227} See Saharia & Pillai, supra note 188, at 72-73.

genetic material contained in these regions.229

In 1980, a subcommittee of the IBWL recommended the amendment of the Wild Life Act to provide for the creation of biosphere reserves.230 Draft legislation has been prepared in cooperation with the International Union for Conservation of Nature and Natural Resources (IUCN),231 and the Indian government has prepared comprehensive project documents for five reserves.232 Altogether, India has identified twelve sites, some of which extend into more than one state, as potential biosphere reserves.233 Controversy over the roles of the state and central government in administering the reserves has delayed their establishment.234 Currently, the states administer national parks and sanctuaries with some financial assistance from the central government.235

Arguments for central government control over biosphere reserves are strong. First, many identified reserves are larger than established national parks and extend into more than one state;236 this makes central administration desirable. Second, the biosphere reserve project documents recommend that the project be financed entirely by the central government.237 A third argument favoring central administration is that the proposed reserves include some land within "scheduled" areas. Under the Indian Constitution, certain groups of indigenous peoples are designated as scheduled tribes and some of their homelands are designated scheduled areas.238 Although the state governments administer the scheduled areas directly, the central government retains the power to regulate the states' administration.239 The tribal people living within scheduled areas have special rights, and the state must consult local tribal councils before imposing regulations on tribes.240 Some tribes are

230. Saharia & Pillai, supra note 188, at 71.
231. The IUCN is a coalition of private organizations, national agencies, and international agencies that seeks to implement a worldwide conservation strategy. For a comprehensive review of the IUCN world conservation strategy, see generally Scharlin, Strategies for World Conservation: The IUCN Redefines Its Partnership, 69:5 SIERRA 31 (1984).
233. These sites and their states or union territories are: Nilgiri (Tamil Nadu, Karnataka, Kerala); Namdapha (Arunachal Pradesh); Nanda Devi (Uttar Pradesh); Uttarakhand (Uttar Pradesh); North Islands of Andaman (Andaman and Nicobar); Gulf of Mannar (Tamil Nadu); Kaziranga (Assam); Sunderban (West Bengal); Thar Desert (Rajasthan); Mannes (Assam); Kanha (Madhya Pradesh); and Norkek (Tura Range). Reports have been prepared for proposed reserves in Nilgiri, Namdapha, Uttarakhand, and Norkek. Id.
234. Id.
235. Id. 1983, supra note 1, at 5.
236. See, e.g., GADGIL, THE NILGIRI BIOSPHERE RESERVE PROJECT (Indian Nat'l Man & Biosphere Comm., Dep't of Env't, Project Doc. 1, 1980).
237. See BIOSPHERE RESERVES, supra note 232.
238. INDIA CONST. ART. 244, SCHEDS. 5, 6.
239. Id. sched. 5.
240. Id.
present in all the proposed biosphere reserves. A declaration of biosphere reserves as scheduled areas appears possible; this would increase central government control of the reserves.

The states also have good arguments for having a role in administering the biosphere reserves. The Indian government proposes to implement the biosphere reserve program by amending the Wild Life Act.\textsuperscript{241} This Act is administered primarily through state agencies. Draft legislation does provide for a few positions that will clearly be filled by central government officials,\textsuperscript{242} but management of the reserves will require large numbers of scientific, administrative, and field personnel. Although project documents recommend that local personnel be hired,\textsuperscript{243} it is unclear whether these will be central or state employees.

States may be reluctant to yield control of biosphere reserves because the reserves can provide substantial revenues. For example, musk deer are found in the proposed Namdapha Biosphere Reserve. The report on this reserve recommends the farming of musk deer and harvesting of their valuable musk excretions.\textsuperscript{244}

The issues raised in this section merely exemplify unresolved questions involving the biosphere program. Such questions must be raised at an early stage of implementation to achieve the necessary consensus of interested parties. A prestigious advisory board, modeled on the IBWL might aid in the achievement of such a consensus.

Over the last twenty years, the Indian government has significantly increased comprehensive, nationwide legislation to protect the environment. This legislation, however, has often been ineffective in protecting the environment. This may be explained in part by the inadequate representation of the interests of citizens in the legislative process; industrial interests, on the other hand, usually are adequately represented. Lawmakers have typically denied ordinary citizens a seat on the central and state pollution boards, perhaps out of fear that citizen representatives would complicate the work of the boards or challenge government actions.

In addition, the legislative process is often very slow. For example, the final enactment of the Air Act took more than ten years.\textsuperscript{245} The central government then took eighteen more months to accept rules enforcing the Act. In the interim, environmental problems reach crisis levels, and exploiters of natural resources increase their activities in anticipation of regulation. Even more damaging is the reluctance of local

\textsuperscript{241} See supra note 230 and accompanying text.
\textsuperscript{242} See BIOSPHERE RESERVES, supra note 232.
\textsuperscript{243} See, e.g., GADGIL, supra note 236.
\textsuperscript{244} NAIROBI, NAMDAHNA BIOSPHERE RESERVE (Indian Nat'l Man & Biosphere Comm., Dep't of Env't, Project Doc., 1981).
\textsuperscript{245} INDIA'S ENVIRONMENT, supra note 5, at 82.
officials to enforce the laws. Without the political will to enforce the laws, no amount of legislation can improve India's environmental situation. 246

IV
THE JUDICIARY AND ENVIRONMENTAL LAW

The courts can play an important role in protecting India's environment. For example, Indian environmental groups have attempted, with varying degrees of success, to influence political decisions concerning the environment. 247 These groups, however, have generally not attempted to use courts because they lack standing. Parliament could strengthen the role of the courts by enacting provisions which give citizens affected by pollution standing to sue polluters. 248

A few courts have already applied more liberal standing in environmental cases. The decision of the Indian Supreme Court in Municipal Council of Ratlam v. Vardhichand 249 is most significant. In Vardhichand, residents of Ratlam Municipality suffered from the stench of open sewers and public excretion. The residents petitioned the local magistrate under Penal Code section 133 to require the municipality to end the nuisance. The magistrate directed Ratlam to draft a plan for solving this problem. After a series of appeals, the Indian Supreme Court affirmed the magistrate's order. 250 This decision openly acknowledges the responsibility of local governments toward residents for the protection of the environment. Lower courts have also ordered polluters to take measures to arrest public nuisances. For example, in Dasari Koteswara Rao v. Kolleru Paper Mills Ltd., the Andhra Pradesh High Court granted a writ petition filed by residents of a polluted area and directed the defendant company to stop dumping effluents in a local canal. 251

In many other cases, however, courts have been unwilling to recognize violations of environmental regulations as serious crimes. Courts have either not imposed punishment or have ordered such petty fines that

246. For a general discussion of problems in the implementation of Indian environmental law, see id. at 180-81.
247. India has the most varied and strongest nongovernmental environmental organizations in the developing world. For discussions of the influence of these groups in framing environmental law, see Tucker, India's Emerging Environmentalists, 69:4 SIERRA 45 (1984). See generally INDIA'S ENVIRONMENT, supra note 5 (provides detailed discussions of grassroots movements).
248. At present, the courts provide the only legal recourse to individuals affected by environmental degradation. The Indian Penal Code provides for criminal prosecution of some polluters and has provisions which give aggrieved parties remedies. See supra notes 104-07 and accompanying text.
250. Id. at 1622.
polluters continue to pay fines rather than cease polluting. Moreover, even active enforcement efforts are hindered by ineffective legislation. For example, as of 1981, the central water board had taken over one hundred polluters to court. A few offenders were prosecuted, but most escaped through loopholes provided in the Water Act.

CONCLUSION

India has made significant progress in its pursuit of environmental protection over the last decade. As an important first step, the government has officially accepted the coexistence of economic development and environmental protection. A central government administrative framework is in place, and Parliament has enacted significant legislation in substantial areas of environmental law. A variety of problems, though, still remain. These include uncertainty about the legislative authority of the central government to implement environmental statutes, enforcement problems, lack of a private right of action, and insufficient resources to implement environmental laws. A concerted, unified effort by the Indian government is necessary to solve these problems and to assure the future integrity of India's environment.


253. INDIA'S ENVIRONMENT, supra note 5, at 30.