

University of Miami Law School Institutional Repository

University of Miami Inter-American Law Review

4-1-1978

Latin American Laws Affecting Coastal Zones

Beverly May Carl

Follow this and additional works at: <http://repository.law.miami.edu/umialr>

Recommended Citation

Beverly May Carl, *Latin American Laws Affecting Coastal Zones*, 10 U. Miami Inter-Am. L. Rev. 51 (1978)

Available at: <http://repository.law.miami.edu/umialr/vol10/iss1/4>

This Article is brought to you for free and open access by Institutional Repository. It has been accepted for inclusion in University of Miami Inter-American Law Review by an authorized administrator of Institutional Repository. For more information, please contact library@law.miami.edu.

Latin American Laws Affecting Coastal Zones

BEVERLY MAY CARL*

For some time now, many Latin American nations have been making broad jurisdictional claims to the oceans. Brazil¹ and Ecuador² have both claimed a 200 mile territorial sea, with the full range of sovereign rights thereover. Argentina has also established a 200 mile territorial sea but allows for freedom of navigation and air traffic for the outer 188 mile zone.³ Brazil, however, permits only the right to innocent passage within its 200-mile territory. Peru, Chile and Mexico have all asserted a 200-mile exclusive economic zone. In contrast to the United States, which has carefully avoided claiming sovereignty over the waters superjacent to its continental shelf,⁵ Mexico has asserted sovereignty over the superjacent waters, the subsoil, artificial islands, installations, and structures within the 200 mile exclusive economic zone.⁶ Peru and Chile have asserted jurisdiction within the 200-mile zone over the seafloor, the subsoil, and hunting and fishing activities.⁷ Peru has also claimed the airspace above the 200 mile zone, but does permit free over-flight of civilian aircraft.⁸ Venezuela has claimed only a 12 mile territorial sea,⁹ but has invoked the straight baseline method of delimiting that sea.¹⁰

*Professor of Law, Southern Methodist University; LL.M. Yale Law School; J.D. University of Southern California; Chairman, International Law Section, Texas State Bar; Vice Chairman for Comparative Law of the International Law Section of the American Bar Association; former president, Dallas International Law Association.

1. D.L. 1,098 of March 25, 1970, art. 2, 10 Int'l Leg. Mat. 1224 (1971).
2. Decree 1,542 of Nov. 10, 1966, as cited in A. Szekely, 1 Latin America and the Development of the Law of the Sea 101, n. 193, (1976).
3. Law 17,094 of Dec. 29, 1966 as cited in Garcia-Amador, *The Latin American Contribution to the Development of the Law of the Sea*, 68 Am. J. Int'l L 33 (1974). However, as Dr. Garcia-Amador points out the subsequent fishing law refers to the Argentine 200 mile territorial sea and makes no mention of freedom of navigation or air passage. Law 17,500 of Oct. 25, 1967 [1967] B Anuario 1401.
4. D. L. 1,098 of March 25, 1970, art. 3, 10 Int'l Leg. Mat. 1224 (1971).
5. See, Convention on The Continental Shelf, 15 U.S.T. 471, T.I.A.S. 5578, 450 U.N.T.S. 311 (1958) art. 1 and Hjelle v. Brooks, 377 F.Supp. 430 at 439, n. 4 (D.C. Alaska 1974).
6. Law of the Exclusive Economic Zone (1976), 15 Int'l Leg. Mat. 382 (1976). Article 5 of this law does recognize the right of other nations in this zone to freedom of navigation and overflight, to lay cables and pipelines, and to other lawful uses related to navigation and communication.
7. Declaration of Santiago of 1952, cited in Garcia-Amador, *supra* note 3, at 38. Peru carefully avoided the use of the words "territorial sea" in her legislation and instead referred to the "maritime zones" and the "jurisdictional waters". 1947 Decree, UN/LEG/SER. B/1 (1951), p. 16, as cited in Szekely, *supra* note 2, at 98, n. 167.
8. Civil Aeronautics Law of 1967, art. 7, as cited in Szekely, *supra* note 2 at 98.
9. F.A.O., *Limits and Status of The Territorial Seas, Exclusive Fishing Zones, and the Continental Shelf*, Circ. 127 (1971); 10 Int'l Leg. Mat. 1255, 1270 (1971).
10. Decree 1,152 of July 9, 1968, art. 1, 229 Gac. Leg. 12(1968) uses this method for delimiting the territorial sea between the Esequibo River and the Araguapiche Point. Brazil also uses the straight baseline method. D.L. 1,098 of March 25, 1970, art. 1, last par., 10 Int'l Leg. Mat. 1224 (1971).

In view of the expansive nature of these claims, it is appropriate to inquire whether Latin American nations are taking legal measures to insure proper utilization and conservation of the resources within these zones for the protection of the legitimate expectations of their own populations, the world community, and future generations. Because the ocean ecology is intimately related with land-based events, it is particularly relevant to consider Latin American coastal zone management efforts. The coastal zone encompasses not only the adjacent sea and its shores, but also inter-tidal areas, salt marshes, wetlands, lagoons and river estuaries. Human activities which impact upon coastal zone ecological systems include resource extraction, port development, hotel construction and industrial pollution.

To provide an outline of Latin American coastal zone management efforts, this article will examine patterns of laws in six representative countries — Argentina, Brazil, Ecuador, Mexico, Peru and Venezuela. Since the concept of coastal zone management is relatively new, few laws focus specifically on the coastal zone itself. However, a wide variety of laws, passed for different objectives, can have a direct or indirect effect on the coastal area. For instance, strict enforcement of a strong anti-pollution statute may be significant, not only to the populace of the industrialized urban centers, but also to the flora and fauna of the coastal zones. Laws to develop the tourism industry can produce an increase in beach front hotels, thereby creating new problems of waste disposal, population density and road construction — all of which may affect the delicate ecological balance of the coastal region.

I. PATTERNS OF LAWS AFFECTING COASTAL ZONES

Most of the following laws were promulgated for reasons other than coastal zone management. These lesser developed nations have been primarily concerned with the achievement of economic development. At times, the goals of economic development and environmental protection appear to be in direct conflict. A poor nation must constantly engage in a delicate balancing process between these two objectives.

Similarly, some of the legislation, particularly in the areas of fishing and mining, appears to be directed mainly toward excluding or limiting foreigners from exploiting certain natural resources. There are apprehensions that access to such resources by countries with advanced technologies may result in a serious depletion or even exhaustion of the resources, before the less developed nation achieves the technological capability to exploit its own resources efficiently. Thus, in the name of conservation, resource tapping may be restricted to the nationals of a less developed country.

A. Fishing Laws

1. General Licensing Systems

Nations have tended to establish licensing requirements for fishing activities. The governmental agency authorized to grant licenses is usually further empowered to set fishing seasons for different species, limit the size of fish which may be taken, and prohibit the use of certain kinds of gear.

In Venezuela, licenses are required for commercial fishing. Fishing is considered commercial, if done by a person employed by another, or if undertaken in a boat which normally requires a crew of three or more persons.¹¹ Venezuela also requires permits for commercial fishing by Venezuelan vessels outside her own waters.¹² Similarly, licenses are required for sport fishing.¹³

The Venezuelan Ministry of Agriculture and Ranching is authorized to establish fishing seasons, prohibit the taking of fish below the minimum sizes,¹⁴ designate zones as fishing reserves or refuges, prohibit certain types of fishing gear, and take any other measures necessary for the conservation and protection of aquatic fauna.¹⁵ Venezuelan law forbids fishing with dynamite, powder, explosives, lime, sulphur, acids or other chemicals which may injure aquatic fauna.¹⁶ Such products may not be carried on fishing boats.¹⁷ Regulations prohibit the use of certain other kinds of fishing gear, such as harpoons¹⁸ and dredges.¹⁹

Large boats, defined as those having a length of 18 meters or more, may not fish within six miles of the Venezuelan coast line. Medium-sized vessels may not fish within two and one half miles of the coast.²⁰ The two mile zone adjoining the coast is restricted to small fishermen with simple equipment. This regulation seems designed to provide special economic protection for small fishermen by preventing competition from the more technically sophisticated vessels.

11. Fishing Law of 1944, art. 13, 148 Gac. Leg. 14 (1965).

12. Reg. No. 1 of Fishing Law (April 3, 1975), art. 1, 391 Gac. Leg. 14 (1975).

13. *See, e.g.*, Reg. of July 4, 1974 of Ministry of Agriculture and Ranching, G.O. 30,441, 373 Gac. Leg. 31, (1974).

14. Reg. of Ministry of Agriculture and Ranching (July 6, 1974) G.O. 30,440, 373 Gac. Leg. 31, art. 1 (1974).

15. Fishing Law of Oct. 6, 1944, art. 20, 148 Gac. Leg. 14 (1965).

16. *Id.* art. 22.

17. *Id.* art. 23.

18. Reg. of Ministry of Agriculture and Ranching (July 4, 1974), G.O. 30,440, 373 Gac. Leg. 31 (1974).

19. Reg. of Ministry of Agriculture and Ranching (July 4, 1974), G.O. 30,440, 373 Gac. Leg. 33 (1974) and Reg. of Ministry of Agriculture and Ranching (Oct. 16, 1974), art. 1, G.O. 30,526, 380 Gac. Leg. 27 (1974).

20. *Id.* art. 3, 4 and 6.

The Venezulean fishing law can affect not only fishermen, but also manufacturers. For instance, it is illegal to manufacture fish fertilizer, flour or oil out of species which have not been designated as proper for this purpose by the Ministry of Agriculture and Ranching.²¹

The basic fishing law of Mexico also requires licenses for commercial and sport fishing, as well as for the cultivation of any marine species.²² Again, a desire to protect a particular economic group seems evident in the Mexican rule, which gives cooperatives a monopoly to catch certain species of fish.²³

Peru requires permits to engage in manufacturing or marketing of fish products, as well as in the taking of fish.²⁴ To protect existing resources, a 1973 regulation sets the dimensions of nets which may be used in coastal waters.²⁵ Another law calls on the Minister of Fisheries to undertake a study of coastal waters, especially the maintenance and growth of the mollusk population.²⁶

In Argentina, the provincial governments have been granted a good deal of authority to act in this area. In the Province of Buenos Aires, the Division of Fisheries is empowered to establish fishing seasons, the amount of permissible annual catches for each species, the numbers of licenses allowed, the types of fishing gear permitted, and the minimum size of fish to be caught. This provincial law also restricts sports fishing in the La Plata estuary to rods only and specifies the types of rods which may be used.²⁷ The Division of Fisheries is charged with making periodic inspections of the internal waters.²⁸ A point system is established by the law to determine priorities in awarding fishing licenses. Preference is given to fishing cooperatives.²⁹ Laws for regulating and licensing fishing also exist in other Argentina coastal provinces, such as Rio Negro.³⁰

A restrictive federal law governs the Argentine "jurisdictional seas" of Tierra del Fuego, Antarctica, and the Islands of the South Atlantic. Commercial fishing in these waters is forbidden. Sport fishing is prohibited from April 1 to November 1.³¹ The government may by regulation forbid the tak-

21. Fishing Law of Oct. 6, 1944, art. 18, 148 Gac. Leg. 14 (1965).

22. Fishing Law, art. 25, D.O. May 25, 1972, as cited in 4 Law. Am. 502 (1972).

23. *Id.* art. 40.

24. D.L. 18,810 of 1971, art. 6 and 7, as cited in 3 Law. Am. 551 (1971).

25. R.M. 01,215 (1973) PE, as cited in 6 Law. Am. 456 (1974).

26. D.L. 20,493 of 1974, as cited in 6 Law. Am. 456 (1974).

27. B.A. Decree 2,269 of May 4, 1965, art. 3, 10, and 15, [1965] Anuario 456.

28. *Id.* art. 4.

29. *Id.* art. 17 and 18.

30. See, e.g., R.N. Decree 2,710 of Nov. 10, 1961, [1961] Anuario 59 and R.N. Law 456 of March 1966, [1966] Anuario 60.

31. Decree 1,284 of Mar. 19, 1969, art. 3, [1969] Anuario 338.

ing of mollusks, crustaceans and other species in any season. The following fishing techniques may not be used: explosives of any kind, toxic substances, beating the water, stunning the fish or dropping or throwing stones, firearms, harpoons, garroting weapons, and reducing or altering the aquatic vegetation or the volume of water.³² Government consent is necessary before introducing any aquatic flora or fauna into these waters.³³ A recent law declares the study of the sociological, geographical, biological, and economic aspects of the Argentine Antarctic "of national interest."³⁴

An example of a supranational organ to control fishing is found in the 1969 agreement between Brazil and Argentina on Conservation of Natural Resources of the South Atlantic. This accord creates a Mixed Commission to regulate the kinds of fishing gear permitted, to establish fishing seasons, to delimit legal areas of fishing, and to make other rules needed "to conserve and protect fishing resources."³⁵

Another international agreement which can affect the licensing of fishing is the Convention of 1958 on Fishing and Conservation of Living Resources of the High Seas, which both Mexico and Venezuela have ratified.³⁶ Article 1 (2) of that instrument requires that member states adopt and apply to their own nationals measures necessary to conserve the living resources of the high seas. Under certain circumstances, such nations may issue conservation regulations affecting the high seas adjacent to their own territorial waters.

2. *Assertions of Authority Over a 200 Mile Fishing Zone.*

The most famous examples of Latin American fishing zone enforcement were the so-called "fishing wars". Peru had established its 200 mile exclusive fishing zone in 1947,³⁷ but its authority was not directly challenged until the "Onassis Affair". In August 1954, Aristotle Onassis sent a whaling fleet into this area "with the avowed intention of challenging Peru's 200-mile limit." In November, Peruvian war vessels and airplanes captured five whaling vessels, including the factory ship. All vessels were taken into the Port of Paita, where summary proceedings were instituted against the five Masters for violation of Peruvian regulations. The Court of the Port Officer fined them \$3 million to be paid in five days. The ships remained impounded

32. *Id.* art. 3.

33. *Id.* art. 4.

34. Law 21,228 of Oct. 24, 1975, [1975] B Anuario 1065.

35. Brazil D.L. 454 of Feb. 5, 1969, art. 1, 33 Lex 131 (1969).

36. 17 U.S.T. 138, T.I.A.S. 5969, 559 U.N.T.S. 285, adopted by Venezuela, Aug. 2, 1961, 63 Gac. Leg. 8 (1961); *see also*, U.S. State Dep't, *Treaties in Force* 296-7 (1977).

37. Decree of 1947, UN/LEG/SER. B/1, (1951), p. 16, *as cited in* Szekeley, *supra* note 2, at 98, n. 167.

as security to be released upon payment in full. Onassis' insurance companies finally paid the fine.³⁸

The first Peruvian tuna and anchovy war occurred in 1955, when Peru seized eleven American fishing boats and fined them \$17,000. Between 1962 and 1971, Peru captured twenty one U.S. vessels and one Japanese ship.³⁹

In 1971, Peru promulgated a new General Law on Fisheries, which makes fishing resources within the 200-mile zone national property.⁴⁰ Fishing may be exercised only by persons with proper permits. Fishing companies in Peru with more than 49 percent foreign capital must enter a contract with the State to reduce their foreign participation to 49 percent or less within an agreed time period.⁴¹ Permits will not be issued to foreign capitalized enterprises who process marine resources for such indirect human consumptive uses as animal or plant food, fish meal or oil.⁴² Peruvian shareholders in such enterprises may not sell their shares to foreigners or to companies in which Peruvians own less than 51 percent of the shares.⁴³

In every private fishing enterprise in Peru, a system must be established whereby the workers therein will receive twenty percent of the net profit, which will normally be reinvested in the company's own shares. This scheme is designed to give the workers a voice in the management of the firm and ultimately a significant part of the equity ownership of the company.⁴⁴

These requirements for partial divestment of foreign ownership of fishing companies in Peru do not affect the foreign vessels fishing within Peru's 200 mile zone. Such vessels may operate within this area, if they are properly registered with the Ministry of Fisheries and licensed. The registration fee is \$500 and a license fee by tonnage is imposed.⁴⁵ Restrictions are placed on the right of such foreign vessels to sell their catches to the Peruvian market.⁴⁶

Ecuador has been a vigorous defender of her claims in the 200 mile zone. Following the adoption of its 200 mile zone in 1955,⁴⁷ Ecuador seized 53 foreign fishing vessels. In the 1969 Fisheries Law, Ecuador reiterated her

38. *Id.* at 184, and Loring, *The United States Peruvian Fisheries' Dispute*, 23 Stanford L. Rev. 391 (1971).

39. Szekely, *supra* note 2, at 182.

40. Decree Law 18,810, art. 1, *as cited in* 3 Law Am. 551 (1971) and Supreme Decree No. 011-71-PE, 1971 *as cited in* 4 LAW. AM. 89 (1972).

41. Decree Law 18,810 of 1971, art. 57, *as cited in* 3 Law. Am. 551 (1971).

42. *Id.* art. 59.

43. *Id.* art. 60.

44. *Id.* art. 63, 64 and 74.

45. Supreme Decree 011-71-PE-1971, art. 30 and 35, *as cited in* 4 Law. Am. 89 (1972).

46. *Id.* art. 29.

47. Decree 1,085 of May 14, 1955, UN/LEG/SER. B/6, 1956, p. 490, *as cited in* Szekely, *supra* note 2, at 100, n. 189.

claim to a 200-mile territorial sea.⁴⁸ Soon thereafter the tuna war broke out when Ecuador captured 52 foreign fishing vessels in 1971. Despite continued seizures in the early part of 1972,⁴⁹ it was reported that by the end of that year the tuna war had been defused (apparently because foreign ships had capitulated and were purchasing Ecuadorean fishing licenses).⁵⁰ Recently, Ecuador issued a Supreme Decree providing for disposition of fish found in foreign vessels seized for violations of Ecuadorean fishing laws.⁵¹

Argentine legislation has progressively reduced the rights of foreigners to fish in her waters. A 1967 statute provided that only Argentine ships could fish within the twelve mile zone adjacent to the coast and authorized the executive to establish additional zones limited to national vessels. Foreign vessels could obtain permits to fish in the outer 188 miles.⁵² A 1972 regulation⁵³ prohibited foreign ships from fishing within 75 miles of the coast north of the 39th parallel, but permitted them to fish in Argentine territorial waters south of the 39th parallel.⁵⁴

Finally, in 1973, foreign vessels were completely excluded by a law which declares the living resources of the "maritime sea" to be property of the state and limits their exploitation to Argentine ships.⁵⁵ The preamble to this law indicates a clear intention to prevent foreigners from exploiting these resources and from competing with nationals. This exclusion of foreign ships is complemented by a 1975 decree which provides special tax exemptions to promote the development of the national fishing industry.⁵⁶

Brazil has divided her territorial sea into two zones of one hundred miles each. Fishing by foreign vessels in the outer 100 mile zone is permitted,⁵⁷ provided such ships are registered and authorized to do so.⁵⁸

48. 1 Law. Am. 75 (1969).

49. Szekely, *supra* note 2, at 182.

50. 4 Law. Am. 365 (1972).

51. Supreme Decree 12,351 of 1975. For further information on Ecuadorean laws regulating fishing, see Supreme Decree 90 of 1975, as cited in 7 Law. Am. 367 (1975); Supreme Decree 669 of July 24, 1972, as cited in 5 Law. Am. 65 (1973); and Supreme Decree 759 of 1975 as cited in 7 Law. Am. 102 (1975).

52. Law 17,500 of Oct. 25, 1967, art. 1 and 2, [1967] B Anuario 1401, and Decree 5106 of Jan. 4, 1970 and Decree 8,802 of Nov. 22, 1970, as cited in Szekely, *supra* note 2, at 96, n. 160.

53. Reg. 265 of Jan. 29, 1972, art. 1, [1972] B Anuario 1,225. This regulation required that foreign ships make certain reports to the National Fishing Agency as to geographic locations of their fishing, size of catches, etc. (art. 4). It also limited the size of nets which could be used (art. 3).

54. It is not clear how this law meshed with the 1969 decree forbidding commercial fishing in the "jurisdictional waters" of Tierra del Fuego, Antarctica, and the South Atlantic Islands. See, *supra* note 31 and accompanying text.

55. Law 20,136 of Feb. 3, 1973, [1973] A Anuario 643.

56. No. 1,501 of 1975, as cited in 8 Law. Am. 399 (1976).

57. Decree 68,459 of Apr. 1, 1971, art. 1 (II), 10 Int'l Leg. Mat. 1,226 (1971).

58. D.L. 1,098 of March 25, 1970, art. 4(2), 10 Int'l Leg. Mat. 1224 (1971).

However, even within that outer zone, the fishing of crustaceans and "other living resources which are closely dependent on the seabed under the territorial sea" is reserved for Brazilian vessels.⁵⁹

The inner 100 mile zone is limited to Brazilian ships.⁶⁰ However, under special circumstances, the Ministry of Agriculture, in consultation with the Navy Ministry, may allow foreign vessels to fish in this zone, provided compensation is paid.⁶¹

To avoid a confrontation over shrimp fishing, the United States and Brazil in 1972 concluded the Shrimp Conservation Agreement. Under this accord, neither state relinquished its position on the 200 mile territorial sea claim, but a system was worked out whereby the United States agreed to license and control the number of American shrimp boats operating in Brazil's 200 mile zone. The agreement further authorizes Brazilian officials to board and search American vessels in that zone and to seize and detain any vessel reasonably believed to be in violation of that agreement. Proceedings against such ships, however, are reserved to the United States and Brazil is to hand over the detained vessels for prosecution in the United States. Certain payments are to be made to Brazil to cover its share of the cost of enforcing the agreement.⁶² A recent Brazilian statute further clarifies this situation by stating that foreign vessels can fish in her territorial waters only with a permit of the Ministry of Agriculture or when authorized to fish pursuant to an international accord.⁶³

Article 27 of the Mexican Constitution gives that nation exclusive control over the exploitation of all resources within the 200 mile economic zone, including the harvesting of marine life.⁶⁴ The 1972 Federal Law for the Development of Fishing created exclusive or preferential fishing zones in the waters above the continental shelf and on the high seas adjacent to the territorial sea.⁶⁵ In 1976, the Law on the Exclusive Economic Zone was passed⁶⁶ and the Federal Law for the Development of Fishing⁶⁷ amended to provide a new regime for the control of fishing by foreign ships.

59. Decree 68,459 of Apr. 1, 1971, art. 1 (II)(3), 10 Int'l Leg. Mat. 1226 (1971). For a description of the French-Brazilian lobster war which underlies this provision, see Szekely, *supra* note 2, at 185 ff.

60. Decree 68,459 of April 1, 1971, art. 1(II)(2), 10 Int'l Leg. Mat. 1226 (1971)

61. *Id.* art. 1(II)(5).

62. May 9, 1972, 11 Int'l Leg. Mat. 453 (1972). See also, P. L. 93-242, 93 Cong., Jan. 2, 1974, 13 Int'l Leg. Mat. 89 (1974); Brazil-United States: Agreement Concerning Shrimp (March 14, 1975), 14 Int'l Leg. Mat.; and Brazil-United States: Agreement Concerning Shrimp (May 1, 1977), 16 Int'l Leg. Mat. 1328 (1977).

63. Law 6,276 of Dec. 1, 1975, 39 Lex 746 (1975); See also, Brazil-United States: Agreement Concerning Shrimp (1975), 14 Int'l Leg. Mat. 909 (1975).

64. See 8 Law. Am. 914 (1976).

65. D.O. May 25, 1972, as cited in Szekely, *supra* note 2, at 67, n. 40.

66. Law on Exclusive Economic Zone, D.O., Feb. 13, 1976, 15 Int'l Leg. Mat. 382 (1976).

67. D.O., Feb. 14, 1976, 15 Int'l Leg. Mat. 385 (1976).

Subject to certain exceptions, commercial fishing within the 200 mile economic zone by foreign vessels is now prohibited.⁶⁸ However, the executive branch is to determine the "allowable catches of the living resources" in this zone.⁶⁹ When the total allowable catch is greater than the hunting and fishing capacity of Mexican vessels, the executive shall grant foreign vessels access to the surplus of the allowable catch.⁷⁰

Foreigners wishing to obtain such permits must register and must agree to the following conditions:⁷¹

- (a) That they will not unload their catch within Mexican territory;
- (b) that they will leave the waters of the zone within the time limit set;
- (c) that they will not engage in commercial fishing or hunting of marine mammals, or of species reserved for fishery cooperatives⁷² or species reserved for sport fishing;
- (d) that they will make available to Mexican nationals on a gratuitous basis the technology used in the fishing operations and in the industrial processing of catches made under these authorizations;
- (e) and that they make a cash deposit as a guarantee of compliance with the foregoing obligations.⁷³

In addition, to obtain permits foreign vessels must comply with these rules:

- (a) at least 50 percent of the crew must be composed of Mexican nationals;
- (b) the national crew must be hired in Mexican territory;
- (c) whenever the wages or benefits paid to the foreign crew exceed those of Mexico, the Mexican crew must receive wages and benefits equal to or higher than those of the foreign crew;
- (d) the vessels may not engage in commercial fishing of anchoveta or sardines;
- (e) sardines may not be taken for bait where prohibited by the Department of Industry and Commerce;

68. *Id.* art. 37.

69. Law of the Exclusive Economic Zones, art 6, *supra* note 66.

70. *Id.* art. 8.

71. Art. 37, *supra* note 67.

72. *See* note 23 *supra* and accompanying text.

73. Art. 37 (I-V), *supra* note 67.

(f) foreign vessels may not fish in zones reserved to nationals.⁷⁴

In awarding such permits, preference will be given to vessels from nations which grant equal conditions of reciprocity to Mexican vessels. Where such reciprocity exists, the Department of Industry and Commerce may exempt the foreign vessels from one or more of the above described conditions.⁷⁵

These restrictive provisions in the 1976 legislation reflect Mexico's economic interest in reserving her marine wealth for future potential development by her own nationals. So far Mexico has exploited only about ten percent of her huge coast. Ninety-eight percent of the scientific research on resources adjacent to her coast has been carried out by foreign powers without Mexican participation. Enforcement of these new provisions, however, may prove difficult, since, as of 1973, Mexico had only 69 units to police her entire coastline,⁷⁶ which is both one of the largest and most infringed coastlines in the world.

It is reported that Mexico has recently concluded agreements with the United States and with Cuba which will reduce the foreign catches of shrimp by forty percent. 2,800,000 tons have been allocated to the United States and 2,190,000 to Cuba. The United States Coast Guard is to monitor this fishing, but is not to interfere with Mexico's enforcement of the new fishing zones. American presence within Mexican waters is to be gradually phased out until it disappears entirely by 1980. The revenue from licensing of foreign fishing vessels (about \$80 per ship, plus five percent of the dockside value of the catch) is to be used to increase the size of the Mexican fishing fleet. Mexico hopes to achieve complete independence in this economic sector by 1980.⁷⁷

3. *Laws Affecting Specific Species of Marine Life.*

Brazil⁷⁸ and Venezuela⁷⁹ are both members of the 1966 International Convention of the Conservation of Atlantic Tuna.⁸⁰ This convention creates an international commission which is authorized to issue recommendations designed to maintain the population of tuna and tuna-like fish.⁸¹ Such recommendations may become binding on the member states within sixty days, subject to the procedures established for protest and review thereof.⁸²

74. *Id.* art. 37 (VI).

75. *Id.* art. 37.

76. Szekely, *supra* note 2, at 136.

77. 8 Law. Am. 914 (1976).

78. D.L. 478 of Feb. 27, 1969, 33 Lex 131 (1969) and Decree 65,026 of Aug. 20, 1969, 33 Lex 1168 (1969).

79. 396 Gac. Leg. 4 (1975).

80. 20 U.S.T. 2885, T.I.A.S. 6767, 673 U.N.T.S. 63.

81. *Id.* art. VIII (1) (a).

82. *Id.* art. VIII.

Mexico has ratified the convention for the Regulation of Whaling, under which an international commission may make binding regulations on the conservation and utilization of whaling resources. This body may, for example, set seasons for whale hunting and designate certain whales as a protected species.⁸³ A 1973 Mexican regulation established a protected area for whales off the Pacific coast.⁸⁴

Venezuela has prohibited the taking of turtles or turtle eggs along the coasts or islands of the Orinoco River for a five year period.⁸⁵ To further protect these animals, this nation has forbidden camping and embarking or disembarking of boats on certain islands in this river, except in case of emergency.⁸⁶ In the Caribbean Sea, a green turtle (*chelonia mydas*) refuge has been declared, encompassing the Aves Islands, the corresponding continental shelf and the territorial sea.⁸⁷ The Ministry of Agriculture and Ranching is charged with enforcing these laws.⁸⁸

Sardines and sardinella anchovia may not be taken for the purpose of canning or industrial processing in Venezuela, unless certain size requirements are satisfied.⁸⁹ Not more than thirty percent of the catch can be smaller than fifteen centimeters and not more than ten percent of the catch under twelve centimeters.⁹⁰

Because anchovy fishing and processing were considered of "social interest and public necessity," Peru expropriated companies engaged in these activities. Owners are to be compensated by a ten percent cash down payment, with the remainder in long term bonds.⁹¹ Peru has also established PESCA-PERU, a corporation owned wholly by the Government to produce fish meal and oil.⁹² In 1976, Peru created the Peruvian Sea Institute (IMARPE), a scientific body empowered to make decisions as to where and when fishing should be permitted. Reportedly, the resumption of anchovy fishing has been recommended.⁹³ In 1975, Peru suspended cod fishing around the area of Port Haurmey.⁹⁴

83. T.I.A.S. 1849, 4 Bevans 248, 161 U.N.T.S. 72; U.S. Dep't State, *Treaties In Force* 377 (1977).

84. D.O. of Jan. 14, 1972, as cited in 4 Law. Am. 279 (1972).

85. Reg. of Ministry of Agriculture and Ranching (May 20, 1972), art. 1, G.O. 29,809; 322 Gac. Leg. 15 (1972).

86. *Id.* art. 3.

87. Decree 1,069 of Aug. 23, 1972, art. 1, 328 Gac. Leg. 11 (1972).

88. *Id.* art. 2.

89. Reg. of Ministry of Agriculture and Ranching (Dec. 18, 1973), art. 1, G.O. 30,283; 360 Gac. Leg. 5 (1973).

90. *Id.* art. 2.

91. D.L. 20,000 of 1973, arts. 56-8, as cited in 5 Law. Am. 551 (1973).

92. D.L. 20,201 of 1973, art. 6, as cited in 5 Law. Am. 551 (1973).

93. 8 Law. Am. 915 (1976).

94. R.M. 01095-74-PE, as cited in 7 Law. Am. 114 (1975).

Lobster fishing has been forbidden in Venezuela for several years. An exception to this prohibition was carved out for the resident fishermen of the Los Roques archipelago.⁹⁵ Even the local fishermen in that area must obtain permits from and register each trap with the National Fishing Office. That Office may not issue permits for more than 6,000 lobster traps in any one season.⁹⁶ It is further required to conduct a census of the fishermen who live in the Los Rocques area in order to implement the provisions of this law.⁹⁷ The commercial sale or transport of lobsters fifteen days after the closing of the season is prohibited.⁹⁸ All lobsters taken in the Los Rocques area must be sent to the La Guaira Port for commercial selling.⁹⁹

A 1971 Argentine decree imposes fees on the extraction of fish, mollusks, crustaceans and algae.¹⁰⁰ The fees on lobsters are substantially higher than those on, for example, squids. However, the prime objective here may be revenue raising rather than conservation.

Brazil limits fishing of pink shrimp in the open sea between the 20th and 30th parallel to vessels in excess of five tons.¹⁰¹ Such vessels must be licensed by the National Fishing Agency. This law does permit exceptions for shrimp boats under construction or approved for construction prior to its effective date.¹⁰² Rather than conservationist aims, the avowed purpose of this legislation is to foster increased production of large shrimp boats.

Pearl gathering and oyster fishing in Venezuela are subject to special laws which require licenses, establish fishing seasons,¹⁰³ and prohibit taking oysters under certain sizes.¹⁰⁴ Peru makes trading in pearls a government monopoly to be administered by the Peruvian Mineral Bank.¹⁰⁵

The capture of ornamental fish is also regulated in Venezuela.¹⁰⁶ In addition, tilapia (a mouth breeding fish) may not be introduced into or

95. Reg. of Ministry of Agriculture and Ranching (July 4, 1975), art. 1, G.O. 30,440, 373 Gac. Leg. 35 (1974).

96. *Id.* art. 5.

97. *Id.* art. 9.

98. *Id.* art. 8.

99. *Id.* art. 7.

100. Decree No. 442 of Apr. 20, 1971 [1971] A Anuario 400.

101. Ministry of Agriculture, Department of Fisheries, Portaria 456 of Sept. 18, 1974, art. 1, 38 Lex 1028 (1974).

102. *Id.* art. 2.

103. Reg. of Ministry of Agriculture and Ranching (Oct. 30, 1965), arts. 5 and 6, G.O. 27,877, 164 Gac. Leg. 3 (1965).

104. Reg. of Ministry of Agriculture and Ranching (July 4, 1974), G.O. 30,440, 373 Gac. Leg. 34 (1974).

105. D.L. 18,882 of 1971, art. 2 and Supreme Decree 065-71-EF, as cited in 3 Law. Am. 553 (1971).

106. Reg. of Ministry of Agriculture and Ranching (July 4, 1974), G.O. 30,440, 373 Gac. Leg. 35 (1974).

cultivated in Venezuelan waters, except if licensed by the National Fishing Office for purposes of scientific research.¹⁰⁷

B. Laws Concerning Shore Lands, Marshes, Islands and Structures Built Over Water

Argentine beaches, river shores, and islands in the territorial sea are public property,¹⁰⁸ which private persons may use in accordance with law.¹⁰⁹ As of 1976, the Venezuelan legislature was considering a bill which would make all beaches property of the state. This proposal would also establish additional zones leeward of the waterfront, which may be declared property of the state.¹¹⁰ The provisions of this bill transferring private property to the state were being attacked as a taking in violation of the Venezuelan Constitution.¹¹¹

Even if this proposal is defeated, it should be noted that Venezuela has already prohibited the construction of walls, fences or buildings which limit access to the beaches.¹¹² Likewise, it is illegal to charge for entry onto a beach, although fees may be imposed for the use of installations built for the purpose of producing income.¹¹³ Finally, this law creates a commission to study the legal situation of private installations in the zone adjacent to the sea.¹¹⁴

Concerned that ecological changes are threatening coral formations and mangrove trees, Venezuela has forbidden the filling of coral structures or mangrove swamps on the coast of the mainland or on the islands in the Caribbean Sea. Houses may not be built over the water in or near the coast or the islands of that Sea.¹¹⁵ The law also prohibits the cutting or destruction of mangrove trees, as well as the dredging of canals or of marine bottoms in mangrove swamps. Polluted water cannot be discharged into these swamps.¹¹⁶ Artificial islands may be installed in these waters only with prior

107. Reg. of Ministry of Agriculture and Ranching (July 4, 1974), G.O. 30,440, 373 Gac. Leg. 32 (1974).

108. Civ. Code art. 2340 (7th ed., 1971).

109. Civ. Code, art. 2341 (7th ed., 1971).

110. 8 Law. Am. 444 (1976).

111. Article 99 of the 1961 Venezuela Constitution guarantees the right to own property. Article 101 provides that expropriation of any kind of property may be declared only on grounds of public benefit and only through a final court judgment and with payment of compensation. In case of expropriations of real property for reasons of "serious national interest" specified by law, payment may be deferred for a specified time; likewise, payment may be made in the form of guaranteed governmental bonds. Article 102 states that "confiscation may not be decreed or executed."

112. Decree 38 of Apr. 5, 1974, art. 2, 367 Gac. Leg. 3 (1974).

113. *Id.* art. 1.

114. *Id.* art. 3.

115. Decree 110 of May 26, 1974, art. 2, 371 Gac. Leg. 2 (1974).

116. *Id.* art. 1.

permission of the Ministry of Health and Public Welfare and the Ministry of Agriculture and Ranching; these permits are in addition to those already required under the Law of Navigation.¹¹⁷

A recent regulation orders the demolition of houses¹¹⁸ and other structures built on the waters among the mangrove trees in the Bay of Buche.¹¹⁹ The Ministries of Interior, of Defense, of Health and Public Welfare, and of Agriculture and Ranching are to coordinate and execute these demolitions.¹²⁰

Another Venezuelan decree prohibits the construction of houses, cabins, or permanent camp grounds on the shores of Caicaro Lagoon.¹²¹ This lagoon is now reserved for sports fishing only and the size of the permissible boats is limited.¹²²

The Argentine Province of Buenos Aires requires a license to extract rushes, weeds or other aquatic plants from its waters.¹²³ The Province of Chubut forbids the extraction or harvesting of algae from the beaches or sea without permission.¹²⁴ This prohibition encompasses a three mile zone extending outward from the coastline.¹²⁵ The provincial executive is ordered to issue regulations which protect and conserve the algae, while at the same time stimulating its rational exploitation.¹²⁶ Seasons and areas for harvesting, as well as companies eligible to collect algae, are regulated.¹²⁷

Salt deposits, according to the Venezuelan constitution, may not be alienated.¹²⁸ The constitution does permit mining concessions in salt beds, but in 1975 a decree revoked all licenses and contracts previously issued for the exploitation of salt marshes and saltworks.¹²⁹ The National Salt Company (ENSAL) is now authorized to use and to purchase all the private concessionaires' installations, equipment, and property necessary to continue

117. *Id.* art. 3.

118. The word used here is "palafitos" which the dictionary translates as "primitive lake dwellings". However, two Venezuelan lawyers have advised the writer that today this word refers to modern, often luxurious homes, built on the waters. These lawyers state that although the owners are permitted salvage rights in these structures, no compensation is paid since their initial construction was illegal.

119. Reg. of Nov. 18, 1974, art. 1, G.O. 30,554, 382 Gac. Leg. 29 (1974).

120. *Id.* art. 2.

121. Reg. of Ministry of Agriculture and Ranching (July 4, 1974) art. 4, G.O. No. 30,440, 373 Gac. Leg. 36 (1974).

122. *Id.* art. 1 and 2.

123. B.A. Decree 2,269 of May 4, 1965, art. 45, [1965] Anuario 456.

124. Chubut Law 939 of July 23, 1972, art. 1, [1973] A Anuario 609.

125. *Id.* art. 4.

126. *Id.* art. 3.

127. *Id.* art. 4.

128. Venezuelan Constitution art. 136 (10).

129. Decree 560 (Nov. 26, 1974), 391 Gac. Leg. 2 (1975).

the mining and processing of salt.¹³⁰ The expressed purpose of this act is to ensure the proper iodization and refining of salt for public health reasons.¹³¹ In addition, ENSAL may contract with mixed-capital companies for the refining and iodizing of salt.¹³²

To oversee the operations of ENSAL there is a commission, consisting of representatives of the Ministries of Health and Public Welfare, of Treasury, and of Development.¹³³ This commission must approve ENSAL contracts both to buy properties of former concessionaires and to process salt for other companies.¹³⁴

In addition, Venezuela has established the National Tourism Corporation, which may request the President of the nation to declare any region, place or building "of public utility," when desirable for the development of tourism.¹³⁵ Construction of buildings in these designated tourist areas requires consent of the Corporation.¹³⁶ The Corporation may also purchase land or personal property for the purpose of tourism development.¹³⁷

Only companies, organizations and persons registered with the Corporation may operate in the tourism industry.¹³⁸ Violations of the laws or of the Corporation's rulings may be punished by fines or by revocation of tourism industry permits.¹³⁹ The Ministry of Development, upon request of the Corporation, enforces these penalties.¹⁴⁰ The president and directors of the Corporation are appointed by the Venezuelan president.¹⁴¹

The Corporation has been given jurisdiction over land and other areas on the shores of the oceans, rivers, lakes and lagoons in a zone extending from the low water line to 500 meters inland. The Corporation is responsible for the inspection, maintenance, order and conservation of this area.¹⁴² No

130. *Id.* art. 3.

131. *Id.*

132. *Id.* art. 4. A mixed capital company usually refers to a corporation, part of whose stock is held by the government and part by private persons.

133. *Id.* art. 5.

134. *Id.* art. 6. Peru has created a wholly owned government corporation, the Salt Company. Its capital will be furnished by the state and its board of directors will consist of representatives from the Ministries of Industry and Commerce and of Energy and Mines and of the Salt Company's workers. See Law 17,525, implemented by D.L. 18,923 of 1971, as cited in 4 Law. Am. 91 (1971) and D.L. 18,350 of 1971, art. 28, as cited in 3 Law Am. 307 (1971).

135. Law of Tourism of July 22, 1973, 348 Gac. Leg. 5 (1973).

136. Decree 11,673, March 9, 1974, art. 23, 365 Gac. Leg. 5 (1974).

137. *Supra* note 135, art. 14.

138. *Supra* note 136, art. 18.

139. *Supra* note 135, arts. 29 and 32.

140. *Id.* art. 32.

141. *Id.* art. 13.

142. *Id.* art. 25.

buildings may be constructed, works undertaken or services rendered in this zone without prior approval of the Corporation.¹⁴³

The Paraguana Peninsula,¹⁴⁴ the San Luis Beach,¹⁴⁵ and Tortuga Island,¹⁴⁶ have all been declared "of public utility and touristic interest". Again, consent of the Corporation is required before building any structure or offering any services within these regions.¹⁴⁷ The shores of the "Capital Region"¹⁴⁸ have also been so classified;¹⁴⁹ the Corporation is charged with designing a plan for the best development of this area from a touristic and recreational standpoint.¹⁵⁰

An area around the place where the Copey Channel meets the Caribbean Sea has likewise been declared "of public utility and touristic interest."¹⁵¹ Both the Corporation¹⁵² and the State of Miranda¹⁵³ are empowered to buy or expropriate land within this region. The Corporation is to plan the construction of tourist and recreational facilities in the zone,¹⁵⁴ with the plan to be executed by the Ministries of Public Works, of Development, and of Foreign Relations.¹⁵⁵

Mexican law also allows its National Tourism Development Fund to buy and administer land for tourism.¹⁵⁶ Private individuals and companies may be authorized by the government to build marinas for tourism purposes.¹⁵⁷

C. Laws on Wildlife, Soils and Forests

To protect mammals, birds, reptiles, and amphibians,¹⁵⁸ the Venezuelan law permits the establishment of reserves, refuges, and sanctuaries. Hunting is prohibited both in the refuges and the sanctuaries. Threatened species may be transferred to sanctuaries for special protection while increasing their population.¹⁵⁹ Reserves are zones set aside for the or-

143. *Id.*

144. Decree 456 of Oct. 3, 1974, art. 1, 379 Gac. Leg. 52 (1974).

145. Decree 144 of June 5, 1974, 371 Gac. Leg. 14 (1974).

146. Decree 1,675 of March 9, 1974, art. 1, 365 Gac. Leg. 13 (1974).

147. Decree 456, *supra* note 144, art. 2; Decree 144, *supra* note 145, art. 7; and Decree 1,675, *supra* note 146, art. 2.

148. This zone extends 500 meters inland from the low tide line.

149. Decree 455 of Oct. 3, 1974, art. 1; 379 Gac. Leg. 51 (1974).

150. *Id.* art. 3.

151. Decree 251 of July 31, 1974, art. 1, 374 Gac. Leg. 12 (1974).

152. *Id.* art. 2.

153. *Id.* art. 3.

154. *Id.* art. 4.

155. *Id.* art. 5.

156. Federal Law on Tourism Development (1974), as cited in 6 Law. Am. 755 (1974).

157. D.O., June 14, 1974, as cited in 6 Law Am. 756 (1974).

158. Wild Life Protection Law of August 11, 1970, art. 2; 279 Gac. Leg. 8 (1970).

159. *Id.* art. 11 (c).

derly development of the wild life population and for hunting under controlled conditions.¹⁶⁰ In the coastal zone, Venezuela has used this authority to declare certain keys and islands near the State of Falcon, a wild life refuge. This action was taken primarily because a number of migratory birds have their nesting sites in this area.¹⁶¹

Argentina forbids hunting of wild animals in national territory or other territory under national jurisdiction.¹⁶² However, under certain conditions, licenses may be obtained for sports hunting.¹⁶³ Permits for commercial hunting are limited to those species specifically designated by the government as suitable for this purpose.¹⁶⁴

Brazil prohibits professional hunting.¹⁶⁵ Other kinds of hunting require a license,¹⁶⁶ and certain methods may not be used, such as poison, fire, and machine guns.¹⁶⁷ The government is required periodically to publish lists of species which may be hunted.¹⁶⁸ Hunting parks may be opened for a recreational hunting season.¹⁶⁹ Similarly, the government may establish national, state or municipal "biological reserves", in which fauna hunting and flora collection are forbidden. Moreover, it is illegal to "change the environment" in such reserves.¹⁷⁰ No new species of wild life may be introduced anywhere in the nation without approval of the government.¹⁷¹

Brazilian law also prohibits trade or commerce in wild life species or their products, if such trade or commerce tends to contribute to the persecution or destruction of such species.¹⁷² Skins of reptiles and amphibians may not be exported from the country.¹⁷³

The Council of Ministers of Venezuela may designate a region as a "national park."¹⁷⁴ Within such parks wild life may not be taken or killed, and the vegetation may not be picked or destroyed. The Ministry of Agriculture and Ranching may permit an exception to these rules for research purposes.¹⁷⁵ The private occupants or owners of property adjoining

160. *Id.* art. 11 (b).

161. Law 911 of June 2, 1972, 323 Gac. Leg. 2 (1972).

162. Law 13,908 of July 29, 1950, art. 1, X-A Anales 8 (1950).

163. *Id.* art. 2.

164. *Id.*

165. Law 5,197 of Jan. 3, 1967, art. 2, 31 Lex 67 (1967).

166. *Id.* art. 1.

167. *Id.* art. 10.

168. *Id.* art. 8.

169. *Id.* art. 5(b).

170. *Id.* art. 5(a).

171. *Id.* art. 4.

172. *Id.* art. 3.

173. *Id.* art. 18.

174. Forestry, Soils and Water Law of Jan. 25, 1966, art. 11, 170 Gac. Leg. 2 (1966).

175. *Id.* art. 12.

these parks may not exploit the flora or fauna in them, nor may such persons appropriate for their own use the waters of such parks.¹⁷⁶

In 1973, the National Parks Institute was created as an independent agency to administer the park system.¹⁷⁷ Responsible for planning, conservation, and education, the Institute is required to issue rules and regulations for insuring the health and safety of persons in the park, as well as preserving the natural resources.¹⁷⁸ The president and the directors of the Institute are selected by the President of the country.¹⁷⁹ Certain decisions of the board of directors are subject to approval by the Ministry of Public Works.¹⁸⁰

In 1972, the government designated the Los Roques archipelago a "national park."¹⁸¹ Also various keys, gulfs, bays, islands, and lakes in the vicinity of Chichiriviche, Morrococoy, and Tucacas have been declared a national park.¹⁸² Within this area, no structures or houses may be built over the waters, and existing constructions must be demolished within sixty days. Coral reefs and mangrove trees may not be damaged or destroyed. Untreated waste waters may not be discharged into the region. Dredging and underwater fishing are also forbidden.¹⁸³ Boat motors may not exceed 15 HP and a speed limit of 8 knots is imposed.¹⁸⁴ Enforcement of this law is placed in the Ministry of Agriculture and Ranching, in coordination with the Ministries of Interior, Development, Defense and Health.¹⁸⁵

For many years Argentina has had a national park system.¹⁸⁶ In addition, the provincial authorities may establish provincial parks.¹⁸⁷ The use of this power in the coastal zone is shown by a 1969 decree of the Buenos Aires Province, which declared the Martin Garcia Island in the La Plata estuary to be a provincial park and recreational reserve.¹⁸⁸

Argentina has also established a Council to develop a plan for soil improvement and cultivation in the federal territories of Tierra del Fuego, Antarctica, and the Islands of the South Atlantic.¹⁸⁹

176. *Id.* art. 88.

177. Law of the National Parks Institute, Oct. 5, 1973, 355 *Gac. Leg.* 20 (1974).

178. *Id.* art. 5.

179. *Id.* art. 9.

180. *Id.* art. 11.

181. Decree 1,061 of Aug. 18, 1972; 328 *Gac. Leg.* 9 (1972).

182. Decree 113 of May 29, 1974, art. 1, 370 *Gac. Leg.* 18 (1974).

183. *Id.* art. 4.

184. *Id.* art. 5.

185. *Id.* art. 6.

186. Law 12,103 of Oct. 29, 1934, [1920-40] *Anales* 548.

187. Decree 2,091 of May 2, 1969, [1969] *A Anuario* 397.

188. B.A. Law 7,580 of Dec. 31, 1969, [1970] *A Anuario* 669.

189. Decree 8, of Jan. 5, 1970, [1970] *A Anuario* 472.

Concern about soil erosion led Brazil in 1975 to order the Ministry of Agriculture to designate within 180 days those lands on which cultivation should be continued, only if special measures are taken to protect the soil.¹⁹⁰ The owners of such land must begin the corrective work to prevent soil erosion within six months and must complete such projects within two years.¹⁹¹ Requests for credit from governmental lending institutions have to be accompanied by a certificate showing completion of these projects.¹⁹²

Conservation of forests and forest reserves has been the subject of recent laws in both Brazil¹⁹³ and Peru.¹⁹⁴ Brazil prohibits the exploitation of any forest or timber without prior consent of the Brazilian Institute of Forest Development (IBDF). Such projects may not be approved unless they include replanting of the trees considered appropriate by that agency or by the law.¹⁹⁵ However, owners of land, which has been approved by the government for ranching and farming, may clear their land and are exempt from the replanting requirement, unless the land concerned has been designated as part of the nation's permanent forest preserves.¹⁹⁶ Likewise, even on his own land, the farmer or rancher is precluded from cutting forests which "should remain as part of the arboreal coverage." He may take therefrom only the wood needed for his own use and only in a "rational manner which will guarantee the permanence of the arboreal coverage."¹⁹⁷

Furthermore, Brazil controls the size of araucarian pines which may be cut.¹⁹⁸ They must be replaced by coniferous trees.¹⁹⁹ Detailed regulations stipulate the number of seedlings which must be planted for each cubic meter of wood cut.²⁰⁰ Similar provisions govern the exploitation of palmitos²⁰¹ (the trees from which hearts of palm are obtained).

The threat to Brazilian forests had become exceedingly grave by the 1960's. Between 1921 and 1957, an estimated 500,000 square miles of her forests had been destroyed, principally through slash and burn agriculture. This destruction of the nation's woodlands, primarily in the eastern and southern pine forests, had brought about serious land erosion and the dry-

190. Law No. 6,225 of July 14, 1975, art. 1, 39 Lex 413 (1975).

191. *Id.* art. 2.

192. *Id.* art. 3.

193. Ministry of Agriculture, Portaria Normativa of July 10, 1974, 39 Lex 694 (1975).

194. D.L. 21,147 and D.L. 20,653, as cited in 7 Law. Am. 675 (1975).

195. Ministry of Agriculture, Portaria Normativa of July 10, 1975, Ch. I, art. 1, 39 Lex 694.

196. *Id.* Ch. I, art. 1, §§ 8 and 10.

197. *Id.* Ch. I, art. 1, § 11.

198. *Id.*, Ch. II, art. 2.

199. *Id.*, Ch. I, art. 1, § 1.

200. *Id.*, Ch. I, art. 1, § 4.

201. *Id.* Ch.IV.

ing up of springs and even climatic changes.²⁰² The IBDF had declared:

The systematic and progressive devastation of the Brazilian forests during a period of 400 years . . . has assumed such vast proportions that it already places the well-being of future generations in jeopardy.²⁰³

This situation not only produced the legislation described above, but also induced the government in 1966 to enact a unique incentive program to promote private investment in forestry and reforestation projects.²⁰⁴ Under this system any Brazilian company, regardless of its business, may credit against its income tax 100 percent of the funds to be invested in forestry or reforestation projects, so long as the total amount so credited does not exceed a certain percentage of the tax due²⁰⁵ (between 25 percent and 50 percent, depending on the location of the project and the tax year involved).²⁰⁶

For example, assume that Volkswagon (VW) of Brazil owes \$1 million in taxes for 1975 and wishes to invest \$400,000 in a forestry or reforestation project in Brazil. VW can now credit against its \$1 million tax 100 percent of the amount it wishes to invest in the forestry project (\$400,000), provided that the total credit does not exceed, in this case, 40 percent of the tax due.²⁰⁷ Since the \$400,000 does not exceed that percentage limitation, VW may take the full amount as a credit. In essence then, the government is footing the entire bill for this investment, since VW ends up paying only \$600,000 in taxes. Moreover, VW, the taxpayer, does not have to operate the forestry project or risk any of its own funds in the project. Rather VW pays that \$400,000 into a special account held by the government for investment in this sector.

Now suppose a certain Mr. X wishes to start a forestry or reforestation project and approaches IBDF for capital to undertake this venture. Upon approval of the project by IBDF, Mr. X can ask VW to consent to the release of its \$400,000 deposit for investment in the project. In exchange, VW will receive back shares in the new forestry company. Although Mr. X, the project organizer, will have to add some fresh funds of his own, he does not have to have any funds in the tax deposit system to qualify for access to VW's funds.

If VW fails to invest this \$400,000 in an approved project within a stipulated time period, the funds will revert to the Brazilian Treasury and

202. *U.S. Dep't of the Army, Area Handbook for Brazil* 20 (DA PAM No. 550-20, 1971).

203. *Os Incentivos Fiscais, Veja* No. 117 (undated, apparently published 1971), 75, 98.

204. Law 5,106 of Sept. 2, 1966, 30 Lex 1240 (1966).

205. Decree Law 1,134 of Nov. 16, 1970, art. 1, 34 Lex 1113 (1970); and Decree 68,565 of Apr. 29, 1971, art. 19, 35 Lex 673 (1971).

206. D.L. 1,376 of Dec. 12, 1974, art. 11 (IV), 38 Lex 1153 (1974).

207. *Id.*

VW will lose the money. Hence, VW is under pressure to find an IBDF-approved project in which to invest the money.

Since this system permits the taxpaying companies to make these investments at no risk whatever, most firms are taking advantage of these credits and the equivalent of millions of U.S. dollars have been deposited for qualified investments in this forestry sector (and other similarly favored industries, e.g., fishing). The hypothetical Mr. X can secure these funds and still retain management control of his business by spreading the equity shares out over a large number of taxpayer-depositors, so that no one of them holds more than a small percentage of the voting stock.²⁰⁸

Between August 1967 and February 1970, IBDF had approved 1,520 forestry projects representing Cr.\$316 million in investments,²⁰⁹ and a planting of 400 million trees.²¹⁰ IBDF claimed that more trees had been planted in the four years preceding 1970 than in the previous 400 years.²¹¹ It was expected that activities in this sector would expand even more after 1970 as a consequence of improvements in the law.²¹²

Of course, in selecting this private investment incentive route, the Brazilian government has relinquished an amount of revenue equivalent to the tax credits taken. Thus, the question arises, would it have been preferable if the government had simply collected these taxes and applied them directly to planting trees. Several advantages do seem to exist in the Brazilian approach. First, this technique serves to tap additional funds, i.e., Mr. X's fresh funds, which might not otherwise have been available to the government for forests. Secondly, Mr. X may well own the land on which the venture is carried out, making it necessary for the government to use its limited resources to lease X's land or to pay him for its purchase or expropriation. Finally, the Brazilian scheme relieves the government from administering the project. If, as the Brazilian planners believe, much of the nation's best know-how is located in the private sector, then private persons, with their technical skills and profit motivations, may prove the most efficient managers for such undertakings. On the other hand, it seems clear that such a program calls for careful supervision by IBDF to insure that conservationist aims are not sacrificed to the entrepreneurial drive for profit.

208. B. Carl, *A Guide to Incentives for Investing in Brazil* (1972), 16-22, and 37-38.

209. *Os Incentivos Fiscais, Veja*, No. 79 (undated, apparently published in 1970 or 1971), at 99.

210. *Brazil Herald* (Rio de Janeiro), March 3, 1971, at 7-B.

211. *Veja, supra* note 203, at 95.

212. Carl, *supra* note 208, at 38.

D. Laws on Water, Waste Disposal and Environmental Pollution.

The traditional law set forth in the Venezuelan Civil Code²¹³ treated water as an object subject to appropriation and control by private persons. However, the 1961 Constitution, in Article 106, provides that the "state shall give attention to the protection and conservation of natural resources within its territory and the exploitation thereof shall be directed primarily toward the collective benefit of Venezuelans." The shift away from the sanctity of private property rights was emphasized in a 1969 decree which provides that the national hydraulic reserves, water-falls, currents and natural water deposits are in the public domain.²¹⁴ Also included in this "public domain" is the amount of land necessary to conserve these water resources. This law establishes certain protected water zones and authorizes the president to create additional ones. Permission of the Ministry of Agriculture and Ranching is required to exploit such waters.²¹⁵

Professor Meier of Venezuela indicates that this law is the first one to really recognize the unity of the nation's hydrological system.²¹⁶ He adds that this statute means "water no longer belongs to anyone in particular, but to all Venezuelans, to the national community . . . to the Venezuelans of today and to those who will come in the future."²¹⁷

Hydraulic works and dams must be constructed in a manner so as to avoid affecting the aquatic animal life. Dams and dikes have to be built with staircases to permit the passage of fish.²¹⁸ No underwater research may be conducted without permission from the Ministry of Agriculture and Ranching.²¹⁹

Once a sea, river, or lagoon has been declared a reserve, it is illegal to discharge into it any petroleum, oils, ashes or waste which has been declared dangerous to aquatic fauna or as prejudicial to fishing activities.²²⁰ Recently, Venezuela adopted a comprehensive environmental law to protect

213. Civ. Code, art. 525 and 545 (1942).

214. Decree 1,333 of March 6, 1969, art. 191, 245 Gac. Leg. 22 (1969).

215. *Id.*, art. 192.

216. Meier, Echeverria, *Las Instituciones Protectoras de los Recursos Naturales Renovables en Nuestro Derecho* 18 Rev. de la Fac. De Der. (Univ. Catolica Andres Bello) 195, 201 (1973-74).

217. Meier, Echeverria, *De Las Aguas Como Bienes (Codigo Civil) A Las Aguas Como Recursos Naturales: Constitucion Nacional, Leyes Especial*, 20 Rev. de la Fac. De Der. (Univ. Catolica Andres Bello) 301, 309 (1974-75). After reviewing the Forest, Soils, and Water Law, the Fishing Law, and the Wild Life Protection Law, Professor Meier concludes the basic purpose of the Venezuelan legal structures on natural resources is the achievement of economic development. But, he notes this need must be balanced with conservation and preservation of these resources so that they will not cease to exist. *Supra* note 216.

218. Fishing Law of Oct. 6, 1944, 148 Gac. Leg. 14 (1965).

219. *Id.*, art. 6.

220. *Id.*, art. 24.

the air, oceans, lakes, rivers, flora, fauna, and so on.²²¹ This law also covers weather modification, radiation, non-biodegradable substances, garbage and other waste. Providing for fines of up to one million bolivares (over 200,000 U.S. dollars) and prison sentences of up to ten years for violations, the statute also creates a Special Prosecutor's Office for Environmental Affairs.

The Venezuelan government had already issued a regulation governing the use, sale and distribution of pesticides.²²² Licenses are required to engage in these activities and the executive can order the use of pesticides on plants or animals stopped.²²³ Likewise, all buildings in the country must satisfy the sanitation requirements established by the Ministry of Health and Public Welfare.²²⁴ Failure to do so can result in fines, or the closing or destroying of the building.²²⁵

Both Venezuela and Mexico are members of the 1954 Convention on the Prevention of Pollution of the Sea by Oil.²²⁶ Recently, Mexico also ratified the Convention to Prevent Sea Pollution Through Discharge of Waste and Other Matter.²²⁷ Under this agreement, Mexico is obligated to take measures to prevent the dumping of waste and other matter which is likely to endanger the health of human beings or marine life.²²⁸ This Convention divides the prohibited substances into three categories. For those in Annex I (e.g., mercury, cadmium, oil), dumping is absolutely prohibited. Dumping of waste which contains large amounts of the substances listed in Annex II is forbidden. Prior studies must be undertaken and all relevant factors weighed before issuing a permit to dump any wastes containing the substances specified in Annex III.²²⁹ This Convention does not cover disposal of substances associated with offshore processing of sea bed mineral resources, or the disposal of wastes incidental to the normal operation of ships.²³⁰

The 1976 Mexican Law on the Exclusive Economic Zone includes jurisdiction over pollution control and abatement within this 200 mile band.²³¹ Its Environmental Pollution Law of 1971 forbids the discharge of waste waters from public, residential, or industrial uses into the sewers, rivers or territorial seas, if such waters will (1) contaminate the recipient

221. Ley Organica del Ambiente, June 16, 1976, 420 Gac. Leg. 2 (1976).

222. Reg. of Ministry of Agriculture and Ranching (May 20, 1961) G.O. 26,557; 58 Gac. Leg. 5 (1961).

223. *Id.*, art. 13.

224. National Sanitation Law (July 21, 1938), art. 14, 104 Gac. Leg. 13 (1963), *as amended* by Law of July 7, 1942, 104 Gac. Leg. 11 (1963).

225. *Id.*, art. 17 and 19.

226. 12 U.S.T. 2989, T.I.A.S. 4900, 327 U.N.T.S. 3, U.S. State Dep't, *Treaties In Force* 320 (1977).

227. 26 U.S.T. 2403, T.I.A.S. 8165, U.S. State Dep't, *Treaties in Force* 323 (1977).

228. *Id.*, art. 1.

229. *Id.*, art. 1.

230. *Id.*, art. 3 (1) (a).

231. Law on the Exclusive Economic Zone (1976), 15 Int'l Leg. Mat. 382 (1976).

bodies of water, (2) interfere with the purification of water, or (3) adversely affect the operation of the water or sewerage systems.²³² Likewise, waste waters which contain contaminants, radioactive material or other harmful substances may not be discharged into the nation's waters, nor be permitted to seep into its soils.²³³ Works or installations may not be constructed if they will discharge contaminating waste waters. The operating of such existing works is to be halted.²³⁴

The Ministry of Health and Public Welfare and the Department of Water Resources are authorized to establish rules and conditions under which waste waters may be discharged into the waterways or be permitted to seep into the earth.²³⁵ These two agencies are also empowered to order the installation of purification systems.²³⁶ Regulations to implement the provisions of this statute on water pollution were issued in 1973.²³⁷

Mexico's Environmental Pollution Law, however, deals with more than simply water problems. Directed against any substance which may "contaminate or degrade the ecological system,"²³⁸ this legislation covers all chemical or biological substances, such as "smoke, powder, gases, ashes, bacteria," and "anything else which may be added to or incorporated into the air, water or earth and which can alter its natural characteristics or environment." The law also includes "thermal pollution, radioactive wastes, and noise levels which can alter the normal state of the air, water or land."²³⁹ "Contamination" is defined as "anything which can harm or annoy the life, health or well being of humans or of flora or fauna."²⁴⁰

Consequently, this law also focuses on soil²⁴¹ and air pollution.²⁴² The executive is ordered to control the use of plaguecides, fertilizers, defoliant, and radioactive materials, as well as the disposal of garbage, stockyard wastes and industrial residues.²⁴⁴ Substances not subject to organic decomposition, such as plastics and aluminum, are singled out for particular attention.²⁴⁵

232. Law of March 11, 1971, art. 15, D.O. March 23, 1971, 12 *Repertorio Anual de Legislacion Nacional* 167 (1971).

233. *Id.* art. 14.

234. *Id.* art. 16.

235. *Id.* art. 14.

236. *Id.* art. 15.

237. D.O. March 29, 1973, as cited in 5 *Law. Am.* 303 (1973).

238. *Supra* note 232, art. 3.

239. *Id.* art. 4(a).

240. *Id.* art. 4(b).

241. *Id.* art. 5 and 23.

242. *Id.* art. 10.

243. *Id.* art. 24.

244. *Id.* art. 26.

245. *Id.* art. 27.

It is illegal to emit into the air substances which can harm human beings, flora or fauna.²⁴⁶ A decree, issued under this law, describes in detail the volume and composition of gases which may not be discharged into the air.²⁴⁷ The Ministry of Health and Public Welfare, with the aid of the Attorney General, is to enforce these prescriptions on air pollution.²⁴⁸

To carry out the broad mandate contained in the Environmental Pollution Law, the executive is required to undertake a study and design a plan for pollution abatement.²⁴⁹ The study should identify, classify, and evaluate the types and sources of pollution, as well as recommend the rules and technology which should be adopted.²⁵⁰ The plan is to be implemented by the Ministries of Water Resources, of Agriculture and Ranching, of Commerce and Industry, and of Health and Public Welfare,²⁵¹ which are to ensure installation of the appropriate technical equipment, treatment processes and disposal methods.²⁵² Environmental factors must also be taken into account in executing public works for urban development, national parks, and other projects. Moreover, the government is to encourage decentralization in its planning.²⁵³ Violations of the Environmental Pollution Law and the regulations issued thereunder, are punishable by fines. In addition, offending factories or establishments may be temporarily or permanently shut down.²⁵⁴

Argentine law prohibits the discharge into its waters of any substances or waste which can harm the aquatic flora or fauna. Likewise, it is illegal to interfere with the natural migratory movements of fish.²⁵⁵ A provincial law of Buenos Aires provides that private boat docks and floats may not be placed in the water without permission of the Water Department.²⁵⁶

In Tierra del Fuego, Antarctica and the Islands of the South Atlantic, the construction of dams on private property must not impede the passage of fish and must permit the preservation of fauna.²⁵⁷ Although enforcement of this decree is placed in the national Minister of Agriculture and Ranching, he may delegate such authority to the Governor of that region.²⁵⁸

246. *Id.* art. 10.

247. Sept. 8, 1971, D. O. Sep't. 17, 1971, 12 *Repertorio Anual de Legislación Nacional* 171 (1971); and see Shroth, *Comparative Environmental Law: A Progress Report*, 1 *Harv. Envir. L. Rev.* 603, 607 (1977), at n. 9.

248. *Id.* art. 61 ff.

249. *Supra* note 232, art. 7.

250. *Id.* art. 9(a).

251. *Id.* art. 5 and 14.

252. *Id.* art. 9(b).

253. *Id.* art. 6.

254. *Id.* art. 29.

255. Decree 1,234 of March 19, 1969, art. 3, [1969] *A Anuario* 338.

256. B.A. Law 7,169 of Dec. 10, 1965, [1965] *Anuario* 442.

257. Decree 1,284 of March 19, 1969, art. 5, [1969] *A Anuario* 338.

258. *Id.*, art. 9.

The Administrator General of Sanitary Works is charged with implementation of the Argentine sanitation laws.²⁵⁹ A provincial law of Buenos Aires concerning the construction of sanitariums and rest homes requires compliance with the sanitation laws.²⁶⁰

In Ecuador, a 1972 Supreme Decree declared her waters a national asset for public use and consequently "outside of commerce." Additional provisions of the decree regulate the use and distribution of water.²⁶¹ Recently, Ecuador also enacted the Law Relating to Prevention and Control of Atmosphere and Water Contamination.²⁶²

Invoking "historical tradition and the present Constitution," Peru has made all water the inalienable property of the state.²⁶³ No private property rights exist in or may be acquired in water.²⁶⁴ This law applies to the waters of the sea up to 200 miles and its internal waters, such as gulfs, bays, inlets, estuaries, rivers and lagoons.²⁶⁵ The state may declare protective zones wherein any activity that affects water resources may be limited or prohibited.²⁶⁶ In case of scarcity, excess, or contamination of water, the executive may also declare an emergency water zone in which necessary protective measures shall be taken.²⁶⁷

It is illegal to dump any solid, liquid or gaseous waste into Peruvian waters which can endanger human health or the normal development of the flora and fauna. Such substances may be discharged only if:

- (1) They have been adequately treated;
- (2) the condition of the receiving body of water is such as to permit natural purification;
- (3) the seepage of such waste underground will not prejudice the use of such soils for other purposes; and
- (4) other applicable regulations have been obeyed.²⁶⁸

259. Law 16,924 of August 5, 1966, [1966] Anuario 245.

260. Law 7,314 of Sept. 26, 1967, [1967] B Anuario 1699.

261. D.S. 369 of May 18, 1972 as cited in 5 *Law. Am.* 65 (1973); see also, D. Daines & G. Falconi, *Water Legislation in the Andean Pact Countries* 121 ff. (1974).

262. D.S. 374, as cited in 8 *Law. Am.* 795 (1976).

263. General Law of Waters, Decree Law 17,752 (July 1969) 14 *Informe Legal* 258. See also, Peruvian Supreme Decree No. 012-77—SA of Oct. 13, 1977, regulating the purity of water and foodstuffs and the treatment of national and international transport discharges. *El Peruano* (Oct. 24, 1977).

264. Decree Law 17,752, art. 1, *supra* note 263.

265. *Id.*, art. 9.

266. *Id.*, art. 5.

267. *Id.*, art. 9 and 10.

268. *Id.*, art. 11.

Moreover, the law forbids the discharge of corrosive wastes or other materials into the public sewer network which may damage the construction of the sewers or render impossible the reuse of the recipient waters.²⁶⁹ No wastes whatever may be dumped into the maritime or continental waters without prior approval of the government.²⁷⁰ All wastes going into the ocean must have been previously treated and must be transported sufficiently far out to sea.²⁷¹ Herbicides and pesticides may not be used on vegetation in rivers without government permission.²⁷²

The Peruvian law divides waters into five different categories, based on the color of the water, its *bacili coli* count, the pH and its contents, such as oils, greases, phenols, lead, arsenic, selenium, chrome, and barium. (Curiously, the law does not mention mercury.) The class into which the water falls then determines how it may be used: Class I, for potable water after treatment with disinfectants, and for recreational and agricultural purposes without additional treatment; Class II, for potable water after sedimentation and filtration and for fish and birds without further treatment; Class III, for potable water and for agriculture after coagulation, sedimentation, filtration and disinfection; Class IV, for irrigation of high stemmed plants and for industrial uses, provided such waters will not flow into the potable water system; and Class V, for industrial use only (and with no connection with the potable water system).²⁷³

Nothing may be discharged into Class I water which would alter its natural characteristics. Nothing may be discharged into Class II or Class III waters which would alter their natural characteristics or alter their temperatures by more than 2.5 degrees Centigrade. After a study of the individual case, the government may permit discharges into Class IV and Class V waters which may alter their temperatures by more than 2.5 degrees Centigrade.²⁷⁴

The waters of the ocean are similarly divided into five different classifications, based on such criteria as color, *bacili coli* count, presence of arsenic, and chrome. Class I seawater is designated as the "beach zone" for recreational purposes. Nothing can be discharged into this water which would alter its natural characteristics or temperature. Class II waters are destined for conservation of marine life. Nothing may be dumped into these waters which would change their temperatures by more than 2.5 degrees Centigrade or alter the natural characteristics of the beach zone waters. Class III waters may be used for industrial purposes. Class IV waters are for

269. *Id.*, art. 12.

270. *Id.*, art. 18.

271. *Id.*, art. 22.

272. *Id.*, art. 23.

273. *Id.*, art. 28.

274. *Id.*

navigation and ports, and Class V waters may be used for any other purpose. Nothing may be discharged into Class III, IV, or V waters which would change the natural characteristics of the beach zone waters. However, on a case by case basis, the government may authorize an alteration in excess of 2.5 degrees Centigrade for Class III, IV and V waters.²⁷⁵

In order to carry out the provisions of this law, the Ministries of Agriculture and Fishing and of Health are to undertake the necessary studies and issue the appropriate regulations. These agencies are also charged with imposing sanctions for violations of the law or regulations issued thereunder.²⁷⁶

In Brazil, a 1973 decree created, within the Ministry of Interior, a Division of Environmental Affairs (Division) to make technical studies and issue necessary regulations for protection of the environment.²⁷⁷ The Division is under the supervision of a nine-man council, whose members are selected by the President.²⁷⁸

The following year, a regulation issued by this Division divided the recreational beach waters into seven classifications on the basis of the number of fecal coliforms, the sight or smell of sewage particles, and the presence of oils, grease, or other dangerous chemicals. The classifications are: (1) Improper quality, (2) suspect quality, (3) undetermined quality, (4) average quality, (5) good or one star quality, (6) very good or two star quality, and (7) excellent or three star quality.²⁷⁹ The collection of samples must be done when the condition of the sea will produce the highest bacteriological count,²⁸⁰ and the methods of analyses employed must be internationally acceptable (as specified in the latest edition of *Standard Methods*).²⁸¹

The waters characterized as "improper" or "suspect" may be declared unfit for recreational purposes.²⁸² The municipal, state or federal authorities must issue bulletins and post warnings about the classification of the waters. When considered necessary and proper, recreational activities may be prohibited in these areas.²⁸³

In 1975, Brazil enacted a law requiring any industry installed or to be installed to take measures to prevent pollution and to correct damage

275. *Id.*, art. 29.

276. *Id.*, art. 6.

277. Decree 73,030 of Oct. 30, 1973, arts. 1 and 4, 37 Lex 1618 (1973).

278. *Id.*, art. 3.

279. Portaria 1 of Dec. 9, 1974, art. 1 (1-7), 38 Lex. 1305 (1974).

280. *Id.*, art. V.

281. *Id.*, art. VI, § 1.

282. *Id.*, art. II.

283. *Id.*, art. VIII.

caused by contamination of the environment.²⁸⁴ "Industrial pollution" is defined as anything which will cause harmful changes in the environment and which may injure the health, safety, or well being of the people, the flora and fauna, or any other natural resource.²⁸⁵ The Ministry of Interior is to issue the necessary regulations,²⁸⁶ and, within the areas of their authority, the state and municipal government may also make rules and take measures to prevent or correct industrial pollution.²⁸⁷ However, industrial establishments "of high interest" to national security or economic development may be given special exemptions.²⁸⁸

Both the federal and state government may adopt emergency measures to reduce pollution.²⁸⁹ Rio de Janeiro and São Paulo have been declared "critical areas."²⁹⁰ In considering the location of industrial projects, the governmental agencies are to avoid worsening the environmental quality of critical areas.²⁹¹

E. Miscellaneous Laws Which Can Affect Coastal Zones

1. Mining and Energy Resources

Venezuela,²⁹² Mexico,²⁹³ and Peru²⁹⁴ have all designated mineral deposits as property of the state. The Mexican Constitution specifically claims public ownership of the mineral deposits in the 200 mile exclusive economic zone.²⁹⁵ The Venezuelan Constitution provides that upon expiration of a mining concession's time period, such property shall revert to the state without any compensation to the concessionaire. The same result follows if the concession is terminated for any other reason.²⁹⁶ Mexican and Peruvian laws authorize the granting of concessions to exploit mineral deposits.²⁹⁷ Mexico's Constitution, however, forbids any concession to conduct, transfer or distribute electricity; these are exclusively state functions.²⁹⁸ Ecuador has also declared petroleum exploration and conservation an "inalienable interest" of the state.²⁹⁹

284. D.L. 1,413 of Aug. 14, 1975, art. 1, 39 Lex 489 (1975)

285. Decree 76,389 of Oct. 3, 1975, art. 1, 39 Lex 593 (1975).

286. *Id.*, art. 3.

287. *Id.*, art. 4.

288. *Supra* note 284, art. 2.

289. *Supra* note 285, art. 7.

290. *Id.*, art. 8.

291. *Supra* note 284, art. 3.

292. Const. (1961), art. 136 (10).

293. Const., art. 27.

294. D.L. 18,880 of 1971, art. 1, *as cited in* 3 Law. Am. 553 (1971).

295. Art. 27, *as cited in* 8 Law. Am. 914 (1976).

296. Const. Venez. (1961), art. 103.

297. Const. Mex. (1917, *as amended* 1972), art. 27, par. 4. Peru Decree Law 18,880 (1971), arts. 8-25, 48 *Informe Legal* 200 (1971)

298. *Id.*, Const. Mex. (1917, *as amended* 1972), art. 27, par. 4.

299. Decree of June 6, 1972, *as cited in* 4 Law. Am. 497 (1972).

The Peruvian Institute of Nuclear Energy, a government agency, has the exclusive right to explore, exploit and refine radioactive substances.³⁰⁰ The Venezuelan Commission on Nuclear Matters is to foster the exploration and exploitation of radioactive minerals.³⁰¹ Brazil has created the Nuclear Energy Corporation of Brazil,³⁰² a mixed private-public company, whose stock must be at least 51 percent owned by the National Commission on Nuclear Energy.³⁰³ This Corporation is to ensure the adequate treatment and elimination of nuclear wastes.³⁰⁴

In Peru, mineral wastes must be disposed of in special dumping grounds where proper security measures shall be taken to prevent contamination of water and soil required for present or future needs of the nation.³⁰⁵ The Ministry of Mining, upon advice of other appropriate agencies, is to establish such special dumping grounds and authorize the installation of mineral compacting plants.³⁰⁶

2. Ports

Administration, maintenance and construction of ports is placed in a national port corporation in both Brazil³⁰⁷ and Peru.³⁰⁸ Ports and navigable waterways in Argentina are "public property, subject to national jurisdiction."³⁰⁹

It is illegal to discharge into the waters of Argentine ports or canals any objects or substances. The government may also extend this prohibition to other zones.³¹⁰ The maritime authorities may set a time limit in which owners must remove objects which have fallen into the waters of ports or canals. If the owners or their representatives fail to retrieve such articles within the time stipulated, the government may remove the items and sell them through the Customs Department. If the price secured is insufficient to cover the government's expenses, it may obtain the difference from the owner.³¹¹ Where the sale price of the goods exceeds the government's cost,

300. D.L. 21,297 of 1975, art. 1 and 2, as cited in Rev. Juridica de Peru 250 (Oct.-Dec. 1975).

301. Decree 461 of Oct. 2, 1974, art. 4(c), 379 Gac. Leg. 53 (1974).

302. Law 5,740 of Dec. 1, 1971, art. 1, 35 Lex 1576 (1971).

303. *Id.*, art 6 and 8.

304. Law 6,189 of Dec. 16, 1974, art. 1(IV)(d), 38 Lex 1169 (1974).

305. *Supra* note 264, art. 15.

306. *Id.*, art. 20.

307. Law 6,222 of July 10, 1975, art. 1 and 4, 39 Lex 399 (1975).

308. Supreme Decree 294-68-HC of 1968 as cited in 1 Law. Am. 57 (1969), and see, Ec.D.S. 290 as cited in 8 Law. Am. 795 (1976), which contains an administrative regime to govern ports.

309. Ley de la Navegacion of July 1, 1973, art 8, [1973] A Anuario 466.

310. *Id.*, art. 16.

311. *Id.*

procedures are established for the owner to claim the difference.³¹²

Salvaging, removal, or demolition of boats or other sunken objects in Argentina's navigable waters requires a license from the maritime authorities.³¹³ Extraction of sand, stones, rushes, and similar items from the areas of ports and navigable waters also requires permission.³¹⁴

Foreign ships which wish to pick up or discharge tourists in Venezuela must register with the National Tourism Corporation and comply with all the tourism regulations³¹⁵ (see *supra*, part I-B). Concern about protecting her ports and jungles from the bubonic plague microbe led Venezuela to declare certain areas of the country, "emergency sanitation zones." No one may live there; all agricultural and forestry activities, as well as hunting and fishing, is forbidden in this area.³¹⁶

3. Education

The Venezuelan Minister of Education is ordered to establish programs in the public schools to develop a "conservationist conscience" in children.³¹⁷ Mexican law also directs the executive to undertake educational and informational programs, so that the nation's youth will understand ecological problems.³¹⁸ Peruvian legislation calls for the government to develop educational and technical projects to "form a public conscience about the necessity of conserving and preserving the nation's waters."³¹⁹

II. THE INSTITUTIONAL FRAMEWORK

In addition to the agencies administering the laws, a few other institutional structures should be mentioned. Venezuela has created a National Council on the Conservation of Renewable Natural Resources,³²⁰ whose membership is composed of representatives from the Ministries of Agriculture and Ranching, of the Interior, of Defense, and of Public Works.³²¹ This body is to be the coordinating and consultative organ for all questions on renewable natural resources. It is also charged with developing a national plan for protection of these resources.³²²

312. *Id.*, art. 16 and 394.

313. *Id.*, title 1.

314. *Id.*, art. 15.

315. Reg. of the Ministry of Development of Oct. 26, 1974, art. 1, G.O. 30,536; 380 Gac. Leg. 35 (1974).

316. Reg. of Ministry of Agriculture and Ranching, art. 1 and 2, G.O. 26,943; 89 Gac. Leg. 5 (1962).

317. Decree 108 of May 27, 1974, 370 Gac. Leg. 15 (1974).

318. *Supra* note 232, art. 8.

319. *Supra* note 264, art. 6(c).

320. Decree 111 of May 27, 1974, art. 1, 370 Gac. Leg. 17 (1974).

321. *Id.*, art. 2.

322. *Id.*, art. 3.

Another committee, composed of representatives from the Ministries of Agriculture and Ranching, of Foreign Affairs, of Defense, and of Health and Public Welfare, is to evaluate all the problems confronting the renewable natural resources in the islands, lagoons and coasts of Venezuela.³²³ Likewise, it is to undertake a census of the existing human population, property and improvements, as well as the value of the latter, in these regions. This group is then to compile a legal, sociological, sanitary and economic report on each zone and to recommend appropriate action.³²⁴ Finally, this committee is to propose to the Ministry of Agriculture and Ranching the creation of specific wild life reserves and marine parks in the coastal regions.³²⁵ To be supervised by the Director of Renewable Natural Resources, a 500 meter protective zone has already been drawn around natural lakes and lagoons.³²⁶ Within this area, no farming or ranching and no destruction of vegetation is permitted without governmental consent.³²⁷

A regulation of the Ministry of Health and Public Welfare has recently created a Research Division on Environmental Contamination to develop a program for combatting pollution.³²⁸ In addition, Venezuela has established a National Consultative Council on Fishing Policy, with representatives from the Ministry of Agriculture and Ranching, the Oceanographic Institute of Oriente University, the Venezuelan Institute of Scientific Research, and the Central University of Venezuela.³²⁹ This group is to make recommendations on development and financing of the fishing industry, as well as on the enforcement of fishing regulations.³³⁰

Peru has upgraded fishing to a separate Ministry of Fishing.³³¹ Ecuador has established a General Office for Marine Development, which will coordinate the activities of the Merchant Marine, the Army Oceanographic Institute and the Naval Transport Company.³³²

III. EVALUATION AND RECOMMENDATIONS

The foregoing survey reveals a plethora of laws which can affect the coastal zones in these Latin American states. Needless to say, the approach has been fragmentary with the little effort made to pull these various rules together into one comprehensive scheme.

Among the nations studied, the most modest territorial sea claim — 12 miles — was made by Venezuela. Yet, it is this nation which has focused the

323. Decree 122 of May 27, 1974, art. 1(a), 370 Gac. Leg. 17 (1974).

324. *Id.*, art. 1(a)(b) and (c).

325. *Id.*, art. 1(d), and Decree 108 of May 27, 1974, art. 1(d), 370 Gac. Leg. 15 (1974).

326. Decree 1,333 of March 6, 1969, art. 52, 245 Gac. Leg. 22 (1969).

327. *Id.*, art. 53.

328. 7 Law. Am. 680 (1975).

329. Decree 62 of June 10, 1969, art. 2(a), 251 Gac. Leg. 3 (1969).

330. *Id.*, art. 2(c) and 4.

331. D.L. 18,026 of 1969, as cited in 2 Law. Am. 223 (1970).

332. D.S. 112 of 1973, as cited in 5 Law. Am. 325 (1973).

greatest amount of legal attention on the coastal zone, with her laws to protect coral reefs, mangrove forests, green turtles, lobsters, tuna and sardines. Likewise, it appears to be moving most rapidly in creating refuges and marine parks, in outlawing dredging and other destructive methods of fishing, and in controlling the types of structures built in the coastal area. The establishment of the Council of Renewable Natural Resources shows that this government is sensitive to the need for coordination of the various attempts to preserve the living resources.

Mexico has passed the most comprehensive statute on environmental protection in Latin America — a law concerned not only with air and water contamination, but also with thermal pollution, radioactive waste, and noise levels. Peru has enacted elaborately detailed legislation on water pollution, although it fails to deal with mercury. Brazil appears to have taken the most direct action to correct soil erosion, achieve reforestation, and control hunting. Argentina has been especially solicitous of the fragile environment of Tierra del Fuego and Antarctica. Ecuador seems strongly committed to enforcing her fishing regulations in the 200 mile zone, at least, insofar as foreigners are concerned.

If the governments of these nations wish to move aggressively into protection and management of their coastal zones, it appears they already enjoy a good deal of the requisite legal authority. In many of these countries, the government owns the mineral deposits, salt beds and nuclear resources. In others, the state has significant control over their exploitation. Water is considered public property in large areas of the hemisphere. Beaches are public in Argentina and private owners of ocean front property are subject to important restrictions in Venezuela. Construction of hotels and development of tourism is under governmental supervision in most of these states.

Moreover, if proper management of the coastal zones necessitates expropriation of certain private properties, many Latin American nations are in a position to do so more easily than would be the case, for example, in the United States. Normally, in the latter nation, private property may be taken in an eminent domain proceeding only upon immediate payment of just compensation, usually interpreted as fair market value at the time of the hearing. Payment of fair market value of such property makes any large scale government effort very expensive.

Faced with a shortage of funds in the public treasuries, combined with a pressing need to institute various social reforms, a number of Latin American nations long ago amended or interpreted their constitutions to permit something less than immediate payment of the fair market value of expropriated property. Article 29 of the Peruvian Constitution said, "no one can be deprived of his property without . . . prior indemnification. . . ."

For the purpose of acquiring land to be turned over to urban squatters, Peru in 1961 enacted a law authorizing the expropriation of real property on which certain slums were located. That law did not provide for payment to the landowner of the full current value of the land. Instead, the owner was paid the value of the land at the time the squatter settlement had been formed on his land. Due to the effect of inflation, this meant that the owner received substantially less than the present fair market value of his land. This approach was justified on the ground that the Constitution only said "prior indemnification" and did not state that the appraisal had to be based on the present value.³³³

The Mexican Constitution provides that property may be taken for "public utility" and that the amount of compensation will be "the tax-assessed value" only.³³⁴ Since tax-assessed value is usually less than fair market value, the amount due is considerably reduced. The Venezuelan Constitution provides that in case of the taking of land for reasons of "serious national interest," payment may be deferred for a specified time period or may be made partially in government bonds.³³⁵ Similar patterns exist in a number of Latin American countries. Hence, should it prove essential that certain private holdings be expropriated to achieve proper coastal zone management, the cost could be significantly reduced in many of these nations.

Another common element in the laws of the nations surveyed is the exclusion of or restrictions on foreign fishing ships. Reducing the amount of fishing by sophisticated vessels from developed nations may well serve to preserve greater quantities of the marine life in the coastal areas of the Latin American nations. The preference for fishing cooperatives in the Mexican and Buenos Aires laws, and the requirement that fishing companies in Peru be partly owned and managed by the workers, could tend to foster the use of intermediate technology in fishing, as contrasted with the highly advanced devices employed by Japan, the United States, and the Soviet Union. Again, this could lead to a reduced current exploitation of these resources and preservation of larger amounts of marine animals for future generations. On the other hand, Brazil and Mexico are engaged in strenuous efforts to build modern fishing fleets. When and if they achieve a certain level of development in this economic sector, the problem of conservation of sea life could again become crucial.

The survey of formal prescriptions in Parts I and II of this paper reveals nothing about how effectively these laws are being implemented. Can Mexico, Brazil, Argentina and Peru really police their long coastlines? To what

³³³ See, Manaster, *The Problem of Urban Squatters in Developing Countries: Peru*, 1968 *Wisc.L.Rev.* 23, at n. 59.

³³⁴ Art. 27 (VI) (1917, as amended 1972).

³³⁵ Art. 101 (1961).

extent will a poor country, hungry for capital, be tempted to use its pollution absorption capacity to attract private investment, despite all the fine environmental protection laws which may be on the books? Brazil's hunting laws indicate a justifiable concern about excessive exploitation of crocodile hides, but can that law be enforced in the remote reaches of the Amazon jungle?

Latin America has traditionally produced excellent lawyers who are quite competent to conceive and write legislation on a variety of complex subjects. The difficulty occurs, not so much in creating the legal framework, but in its execution. Almost by definition, developing nations suffer from a shortage of trained technicians and managers to execute programs. This insufficiency of skilled manpower tends to be particularly acute in the government bureaucracies, which must apply the formal prescriptions. Likewise, the implementing agencies often lack enough funds to carry out their mandate.

If these nations are to be advised to adopt legislation specifically aimed at coastal zone management, the execution and enforcement aspects should not be overlooked. As shown in the survey of these nations, there is no lack of laws which can affect coastal zones. Rather, the principle need is for a unified legal scheme to pull together these fragmentary rules and different administering agencies. The Venezuelan Council on Renewable Natural Resources may prove to be a useful scaffold upon which a coastal zone management authority could be built.

A rational plan for management of the coastal zones should have the following elements. First, the coastal zones need to be defined and all the subjects to be brought within its purview itemized, *e.g.* buildings, parking lots, wet lands, fishing, ocean mining, wildlife, and plants. Next, a Commission on the Coastal Zone should be established. For the nationals studied herein, it would seem appropriate to have representatives on that Commission from the departments of agriculture, fishing, water, mining, development, and tourism. One of the Commission members should have expertise in marine biology, one in physical or chemical sciences, one in property development, and one in law. The Commission should be granted the financial resources to hire a full time staff and to expropriate property. It will also need the power to compel witnesses to testify, to issue or deny permits to carry out its purposes, and to determine the boundaries of the coastal zone.

The Commission should be required to develop a draft comprehensive plan for management of the coastal zone within a specified time period. The draft plan should be based on scientific studies and economic research. Public hearings should be conducted both before the preparation of the draft plan and after the draft plan has been written and circulated for comment. Any interested citizen should be permitted to testify at these hearings. The Commission should then prepare and adopt a final plan within a fixed

time period and submit such final plan to the legislature. Unless the legislature rejects the plan within a certain time, the plan would become law.

Thereafter, the Commission would be in charge of carrying out the plan. All structures and developments within the zone would have to conform to the plan and building permits would have to be obtained from the Commission. Expropriatory and zoning powers would also enable it to carry out the plan. Judicial procedures should be incorporated into the law to permit appeals to the courts from illegal or arbitrary decisions of the Commission.

A model Coastal Zone Management Statute has been drafted and proposed for enactment by the states within the United States.³³⁶ With proper modifications to fit their own national needs, the Latin American nations may find this model statute a helpful paradigm. They may also wish to examine California's experience with its new coastal management zone law.³³⁷

In addition, consideration should be given to possible adaptations of the Brazilian tax incentive mechanism to induce private investment in forestry projects (see Part I, C, above). This approach might be used to encourage the development of ecologically-minded businesses who would promote the sound development of the region, e.g., fish farming and restocking, reforestation, and wild animal husbandry. Such technique has the advantage of tapping additional capital from the private sector and relieving the government of part of its administrative burden.

The actual drafting of any legislation on coastal zone management should be done by Latin American lawyers, who are best equipped to mesh any new law into their existing legal structure. Of course, those attorneys ought to look at the experiences of other nations and to borrow legal concepts where appropriate. The cost of such services by national lawyers would be a local currency expense, which could be reasonably borne by the nation concerned.

To the extent any funds for coastal zone management may be available from international organizations or developed nations, such monies should be directed toward the implementation and enforcement aspects of coastal management. Hard currency grants or loans might be utilized, for example, to cover any foreign exchange costs involved in training local administrative personnel or in acquiring research vessels, anti-pollution devices, and water treatment equipment from the developed world. To qualify for such funds, the recipient developing nation should be required to allocate a corresponding amount of local currency for employment of national personnel needed to carry out and enforce the plan. Only in this manner can there be any realistic hope of bridging the gap between the formal prescriptions and actual practice.

336. Smith, Ratner & MacBeth, *Model Coastal Zone Statute*, 1 Coastal Zone Management J. 209 (1974).

337. See, e.g., Douglas, *Coastal Zone Management — A New Approach in California*, 1 Coastal Zone Management J. 1 (1973); Healy, *Saving California's Coast: The Coastal Zone Initiative and Its Aftermath*, 1 Coastal Zone Management J. 365 (1974); Bowden, *Legal Battles on the California Coast: A Review of the Rules*, 2 Coastal Zone Management J. 273 (1976).