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Biodiversity Conservation v. Hydropower Dams: Can Saving the Fish Save the Mekong River Basin?

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Biodiversity Conservation v. Hydropower Dams: Can Saving the Fish Save the Mekong River Basin?

Samantha G. Pottenger*

TABLE OF CONTENTS

I. INTRODUCTION	111
II. THE MEKONG RIVER: TECHNICAL DETAILS	114
III. THE PROBLEMS WITH DAMS	115
IV. THE BENEFITS OF DAMS	117
V. GENERAL BARRIERS TO COOPERATION	118
VI. SAVE THE ANIMALS, SAVE THE MEKONG?.....	119
A. <i>Alternate Avenue One: The Convention on Biological Diversity</i>	121
1. <i>Background</i>	121
2. <i>Law of the Convention</i>	122
3. <i>National Implementation of the CBD</i>	123
a. <i>Thailand</i>	123
b. <i>Vietnam</i>	124
c. <i>Cambodia</i>	124
d. <i>Myanmar</i>	125
e. <i>China</i>	125
4. <i>Case Law and the CBD</i>	126
a. <i>Argentina v. Uruguay: The Pulp Mills Case</i>	126
5. <i>Application</i>	128
6. <i>Potential Problems</i>	130
7. <i>Conclusion</i>	130
B. <i>Alternate Avenue Two: 1997 United Nations Convention</i>	131
VII. CONCLUSION	132

I. INTRODUCTION

Coursing from the edge of a Tibetan plateau high in the Tangua Shan Mountains¹ begins the lifeblood of Southeast Asia, the Mekong River.² The

* J.D., University of the Pacific, McGeorge School of Law, conferred May 2009. Judge Ronald Robie, thank you very much for the guidance and advice during the development and completion of this Comment. To my parents, Jim and Amanda, thank you both so very much for everything.

1. Introduction to Environmental Science in the MRB, 2 (Oct. 17, 2001), http://www.mrcmekong.org/envir_training_kit/English/Course%20B%20%20Introduction%20to%20Environmental%20Science/Operational/Readings/PDF/Reading%2001-MRB%20Environment.pdf.

Mekong River flows from the Tibetan plateau through China, then becomes a series of whitewaters and rock fields that divides Myanmar and Laos.”³ In Laos, “freshwater dolphins play on the banks” of the Mekong, surrounded by a “stunning region of steep limestone gorges.”⁴ After Laos, the Mekong then heads south through Thailand where floating bazaars dot water, “seething with cargo ships and merchants haggling over . . . hundreds of other goods,⁵ and finally coils its way through Cambodia to Vietnam.⁶ Not only is the Mekong River the source of food, water, and transport for over 60 million people from over 90 distinct ethnic groups,⁷ the river basin is also home to over 1,300 species of fish,⁸ creating one of the most diverse fisheries in the world.

Undeniably, the Mekong River Basin is a valuable resource. Not only is the Mekong River Basin home to an extremely diverse ecosystem,⁹ but several unique species of wildlife, not found anywhere else in the world, make the Mekong River Basin their home.¹⁰ The ecosystem of the Mekong River Basin is an essential component in the lives and cultures of the indigenous people who live along the river, as their way of life revolves around the rich biodiversity found in the Mekong River Basin.¹¹ In fact, there are concerns that the loss of biodiversity in the Mekong River Basin could have a negative impact on the lives of the indigenous people, and that biodiversity conservation is necessary to protect indigenous cultures and ways of life.¹²

However, the goal of conservation of biodiversity is at odds with the economic potential that development of the Mekong River Basin would provide.¹³ Construction of bridges over, and navigational channels in, the

2. International Rivers, Lancang (Mekong) River, <http://internationalrivers.org/en/china/lancang-mekong-river> (last visited Mar. 4, 2008).

3. Joshua Kurlantzick, *The Mysterious Mekong Starts to Reveal Itself*, N.Y. TIMES, Oct. 2, 2005, available at <http://travel2.nytimes.com/2005/10/02/travel/02mekong.html?pagewanted=1&ei=5070&en=a95ad80eb0ed0815&ex=1135918800>.

4. *Id.*

5. *Id.*

6. Introduction to Environmental Science in the MRB, *supra* note 1, at 2.

7. World Wildlife Federation, About the Mekong River, http://www.panda.org/about_wwf/where_we_work/asia_pacific/our_solutions/greatermekong/mekong_river/about_the_mekong/index.cfm (last visited Mar. 3, 2008).

8. *Id.*

9. The Mekong River Basin has areas with “particularly rich biodiversity” due to remote locations with little human interference. For a specific discussion on the richness of the biodiversity in specific ecosystems (such as wetlands, aquatic, and terrestrial), see Nantana Gajasen et al., *The Mekong River Basin: Comprehensive Water Governance*, in *THE MULTI-GOVERNANCE OF WATER: FOUR CASE STUDIES*, 43, 47-8 (Matthias Finger, Ludivine Tamiotti & Jeremy Alluche eds., 2006).

10. *Id.* at 47. In addition to having several “hot spots” of rare species habitats, the Mekong River Basin is likely home to a number of unknown species. *Id.*

11. John Woodliffe, *Biodiversity and Indigenous Peoples*, in *INTERNATIONAL LAW AND THE CONSERVATION OF BIOLOGICAL DIVERSITY* 255, 258 (Michael Bowman & Catherine Redgwell eds., 1996).

12. *Id.*

13. Gajasen et al., *supra* note 9, at 43, 48. In their article, the authors note that the Mekong River Basin is an area of “natural wealth,” fertile flood plains, and large amounts of fish (one million tons caught annually).

Mekong would allow landlocked areas, such as Laos and areas of southwestern China, access to seaports. Such construction would also facilitate the transport of cargo between the basin states.¹⁴ Hydropower dams could provide irrigation for nearby farmlands and electricity for the surrounding population.¹⁵ Considering that a substantial amount of the population in most of the states along the Mekong River Basin is poor,¹⁶ development of the river as an economic resource could help to alleviate the poverty of these people.

Biodiversity conservation and economic development thus appear to be conflicting uses of the Mekong River Basin that are difficult to reconcile.¹⁷ This conflict is a major cause of the modern conflict over usage of the Mekong River.¹⁸ Finding the appropriate balance between maintaining the diverse ecosystem in the Mekong and the increasing demands of developing societies is a struggle for the states of the Mekong River Basin. Finding a balance between the competing interests of biodiversity conservation and development is impeded by the fact that use the Mekong River Basin is shared by six sovereign nations, each of which wants to utilize the resources of the Mekong in a manner that maximizes the benefits to their own countries.¹⁹ Creating a proper method of transboundary water governance is therefore necessary to find an acceptable balance between conservation and development of the Mekong River Basin.²⁰

By creating a comprehensive, multi-state plan for integrated management by all of the states along the Mekong River Basin, those states can ensure that the Mekong River Basin is developed in a manner that takes into consideration the environmental and economic impact that one state's actions will have on other states.²¹ However, though the Lower Mekong Basin states of Lao People's Democratic Republic (Laos), Thailand, Cambodia and Vietnam are party to a regional agreement concerning the management and use of the Mekong River Basin, the Upper Basin states of Myanmar and China are not.²² This has resulted

14. Yuzo Akatsuka & Takashi Asaeda, *Econo-political Environments of the Mekong Basin: Development and Related Transport Infrastructures*, in *ASIAN INTERNATIONAL WATERS: FROM GANGES-BRAHMAPUTRA TO MEKONG* 173, 180, 182 (Asit K. Biswas & Tsuyoshi Hashimoto eds., 1996).

15. David Hawkings, *Chinese Dams Disrupt Mekong Lives*, *AL JAZEERA ENGLISH*, June 17, 2007, <http://english.aljazeera.net/News/aspx/print.htm>.

16. Gajaseni et al., *supra* note 9, at 52.

17. Akatsuka et al., *supra* note 14, at 200 (noting that the rock blasting necessary to create better navigation channels can cause flood damage downstream and increase side bank erosion); *see also* Gajaseni et al., *supra* note 9, at 50-1 (noting the damage of hydropower dams).

18. Gajaseni et al., *supra* note 9, at 49-50.

19. *Id.*

20. Matthew Finger et al., *Introduction: Conceptual Elements*, in *THE MULTI-GOVERNANCE OF WATER: FOUR CASES STUDIES* 21 (2006). The authors stress the importance of transboundary water governance to the international arena as the development of river basins has the potential to influence seventy percent of the world's land area.

21. *Id.* at 21-2. Integrated river basin management, incorporating a "thorough understanding of the physical, chemical, geologic, natural, and environmental resources of the basin" is "increasingly put forward as the main model for managing water resources."

22. *See* Introduction to Environmental Science in the MRB, *supra* note 1, at 1; *see* Mekong River

in some controversy, as construction of dams by China on the Upper Basin of the Mekong River, has been derided as causing a series of detrimental environmental impacts on the Lower Basin of the Mekong.²³ As a result of the lack of a regional agreement, the downstream states are in a “powerless position” to “enforce or negotiate with China regarding water resource development and management.”²⁴

This paper will examine the controversy surrounding China’s construction of hydropower dams on the Upper Mekong, and discuss possible legal alternatives that the downstream states can use to compel China to enter into an agreement regarding the development and use of the Mekong River Basin.

Part II provides a general discussion of the hydrological and biological characteristics of the Mekong River Basin. Part III addresses the detrimental environmental impacts of dam construction on rivers in general. This Part also specifically addresses the environmental impacts that the Chinese hydropower dams have on the Mekong.

Part IV discusses the current regional agreement in place between the downstream states concerning the development and conservation efforts on the Lower Mekong River Basin. This section will also focus on international conventions that the downstream states may be able to use in lieu of a regional agreement to compel Chinese participation in development and conservation dialogue. Part V examines China’s position that it should not be forced to join a multi-state agreement. Finally, Part VI discusses the general difficulties of using international convention to compel Chinese participation in a regional agreement dictating its use of Mekong River Basin resources.

II. THE MEKONG RIVER: TECHNICAL DETAILS

At a length of 4,800 kilometers,²⁵ the Mekong River is the twelfth longest river in the world.²⁶ The Mekong “flows through six distinct geographical regions,”²⁷ starting in the Tibetan Plateau, through Yunnan Province in China, Myanmar, Thailand, Cambodia, Laos and Vietnam.²⁸ The areas adjacent to the streams that flow into the Mekong River collectively comprise what is known as the Mekong River Basin, a total land area that is “nearly the size of France and

Commission, About the MRC, http://www.mrcmekong.org/about_mrc.htm, (last visited on Oct. 22, 2007) [hereinafter About the MRC].

23. See Fred Pearce, *NewScientist.com*, *Chinese Dams Blamed for Mekong’s Bizarre Flow*, (Mar. 25, 2004), <http://www.newscientist.com/article.ns?id=dn4819&print=true>; *Imaging our Mekong, The Dry, Dry Mekong*, <http://www.newsmekong.org/node/565> (last visited May 14, 2009).

24. Gajasen et al., *supra* note 9, at 50.

25. Mekong River Commission: For Sustainable Development, *The Land and Its Resources*, http://www.mrcmekong.org/about_mekong/about_mekong.htm (last visited May 14, 2009).

26. *International Rivers*, *supra* note 2.

27. Mekong River Commission: For Sustainable Development, *The Land and Its Resources*, *supra* note 25.

28. *International Rivers*, *supra* note 2.

Germany together.”²⁹ The Mekong River Basin is divided into two parts: the Upper Mekong Basin (UMB) consisting of the basin areas in China’s Yunnan Province and Myanmar; and the Lower Mekong Basin (LMB), consisting of the basin areas in Laos, Thailand, Cambodia and Vietnam.³⁰

The annual flood cycles in the Mekong River Basin support some of the most bountiful and diverse inland fisheries in the world.³¹ Local people depend on the flood cycles to replenish the traditional feeding and breeding areas of the fish with nutrients, sediment, and smaller fish.³² Interference with the water flows of the Mekong threatens the sustainability of the fisheries.³³ The sustainability of inland fisheries is not the only thing threatened by alteration of the Mekong River’s natural flow.³⁴ The flows of the Mekong River play a vital role in the reduction of salinity in the Vietnamese agricultural lands.³⁵ Saltwater intrusion results from lower than normal flows.³⁶ This causes a reduction in the amount of agricultural lands available to plant crops.³⁷ In turn, a decrease in planting results in a reduction in crop yields, and results in an overall negative economic impact on the farmers who rely on the harvests as a source of income.³⁸

III. THE PROBLEMS WITH DAMS

The “health and integrity of the Mekong’s ecosystem” is dependent on the “annual and predictable flood-drought cycle of the river and the enriching sediment washed down from the upper catchments.”³⁹ However, actions by China in the Upper Mekong Basin threaten the stability of the river’s ecosystem.⁴⁰ Faced with a “rapidly growing need for electrical power,” China has constructed two hydroelectric dams on the Upper Mekong, the Manwan and the Dachaoshan,⁴¹ while six more are either under construction or in the planning

29. Mekong River Commission: For Sustainable Development, *The Land and Its Resources*, *supra* note 25.

30. *See* Introduction to Environmental Science in the MRB, *supra* note 1, at 1.

31. Dr. Olivir Cogels, *Foreward* to OVERVIEW OF THE HYDROLOGY OF THE MEKONG BASIN iv (Nov. 2005), available at http://www.mrcmekong.org/download/free_download/Hydrology_report_05.pdf.

32. *Id.*; *see also* Gajaseni et al., *supra* note 9, at 48.

33. Cogels, *supra* note 31, at vi-vii. According to the report done by the Mekong River Commission, four out of five people in Cambodia rely on the annual flood cycles for food and income.

34. *Id.* at 9-10.

35. *Id.*

36. *Id.* *See* Gajaseni et al., *supra* note 9, at 55 (noting the potential for underground salt deposits to dissolve and leach to the soil surface due to the presence of reservoirs).

37. *Id.*

38. *Id.*

39. Int’l Rivers Network, *Briefing Paper 3: China’s Upper Mekong Dams Endanger Millions Downstream* (Oct. 2002), available at <http://www.irm.org/programs/mekong/gmskit/03.uppermekongfac.pdf> [hereinafter *Briefing Paper 3*].

40. *Id.*

41. Probe Int’l, *The Hydrolancang Cascade: Fact Box*, (Apr. 30, 2006), available at <http://www.probeinternational.org/index.php?q=three-gorges-probe/news-and-opinion/hydrolancang-cascade-fact-box>.

process.⁴² Critics allege that the construction of the dams will “change the river’s natural flood-drought cycle and block the transport of sediment.”⁴³

The protests and concerns surrounding the construction of dams are not unfounded,⁴⁴ as the dam construction has several avenues for potential harm.⁴⁵ The ecosystem of a river is dependent on temperature regularity.⁴⁶ Fluctuations in the river’s temperature caused by the release of stored reservoir water can alter the oxygen content and nutrient levels that are depended upon by plant life, organisms, and other river fauna.⁴⁷

Furthermore, “[d]amming a river and altering its flow pattern . . . obstructs its’ natural current and affects the water’s habitat,” creating not only ecological impacts beyond those caused by temperature fluctuations, but economic harm as well.⁴⁸ Dams can interfere with the spawning run of fish, since the height of the dams often pose an obstruction too high for fish to swim over.⁴⁹ Interference with spawning runs causes havoc on local communities that are dependent on the fish for survival and income.⁵⁰

Specific criticism of the Mekong River dams currently under construction by the Chinese government rests on allegations that construction of the dams “has proceeded without consultation” or “any real assessment” of the impact on the Lower Basin states.⁵¹ The effects of the two completed dams have already been felt: the size of catches in Thailand have decreased; the variety of fish species in the Mekong has diminished; and erosion of the river banks has increased as the

42. STEPHEN C. McCAFFREY, *THE LAW OF INTERNATIONAL WATERCOURSES* 286 (Oxford University Press 2007).

43. *Briefing Paper 3*, *supra* note 39.

44. See World Wildlife Federation, *The Problems with Dams*, http://www.panda.org/what_we_do/footprint/dams_initiative/problems/ (last visited May 14, 2009) (gives a general discussion and more information about the problems of dams) [hereinafter *The Problem with Dams*].

45. *Id.*

46. Canadian Geographic, *Dam Science: Although Labelled a Green Energy Source, Hydro-electric Production Can Have Negative Effects on the Environment*, <http://www.canadiangeographic.ca/magazine/ND05/indepth/environment.asp> (last accessed on May 14, 2009).

47. *Id.* The temperature irregularities caused by the release of reservoir water are the result of a process called stratification. The storage of water in a dam reservoir creates multiple levels of water at varied temperatures, with warmer levels on the top and colder levels on the bottom. The colder levels are generally released first, causing fluctuations from what the river temperature would be like without the dam. For a general introductory explanation of the process, see <http://en.wikipedia.org/wiki/Dam>.

48. *Id.*

49. MARK REISNER, *CADILLAC DESERT: THE AMERICAN WEST AND ITS DISAPPEARING WATER* 7 (Penguin Books 1993) (1987). In his book, Mr. Reisner discusses a domestic example of the interference dams pose with fish spawning. The construction of the Grand Coulee Dam, the largest concrete structure in the U.S., and the Columbia River interfered with the “greatest spawning run of salmon in the world.”

50. *Returning the Columbia’s Salmon to Canada*, CASCADIA TIMES (2007), available at <http://www.times.org/archives/2007/returning.html>.

51. Int’l Rivers Network, *Briefing Paper 2: Navigation Project Threatens Livelihoods, Ecosystem* (Oct. 2002), available at <http://www.irn.org/programs/mekong/gmskit/02.navfactsheet.pdf> [hereinafter *Briefing Paper 2*].

opening of dams cause the natural flow of the Mekong to change.⁵² In its Third National Report to the Convention on Biological Diversity, the Cambodian government specifically stated its concern over adverse effects caused by upriver dam projects.⁵³ For example, in 1995 construction of a dam in the upper Mekong blocked the flow of the Mekong and caused “record low flows in northern Thailand and Lao,” halting the “movement of large river vessels” until the flow was restored.⁵⁴

In addition, the Upper Mekong Navigation Improvement Project, a planned project intended to create a shipping channel for large ships to navigate from China to Laos, involves the blasting of reefs, rapids, and shoals to clear the path for ships to sail “freely” down the Mekong.⁵⁵ Blasting the reefs, rapids, and shoals would have “widespread ecological impacts along the entire length of the Mekong,” as the “rapids and reefs . . . serve as vital breeding grounds and safe haven for fish,” and could “jeopardize the survival of rare species.”⁵⁶

IV. THE BENEFITS OF DAMS

Undercutting the uproar over the environmental implications of Chinese dam building in the Mekong headwaters are the very rationales that support dam construction in the first place. At the heart of the controversy is that dams have the potential to provide very real benefits.⁵⁷ Hydropower dams are attractive sources of energy for several reasons: they are a source of renewable energy, they provide generating costs that are low relative to other sources of energy, and the energy is produced without carbon emissions.⁵⁸ For example, although a salmon fishery may have been “decimated” when the Grand Coulee Dam was built on the Columbia River, the hydropower dam generated 2,138,000 kilowatts of electricity, the largest single source of electricity in the world at that time.⁵⁹ It is because of these potential benefits that China defends its plans to continue

52. For a general examination of the problem, see Jane Perlez, *In Life on the Mekong, China's Dams Dominate*, N.Y. TIMES, Mar. 19, 2005, available at <http://www.nytimes.com/2005/03/19/international/asia/19mekong.html>.

53. KINGDOM OF CAMBODIA, THIRD NATIONAL REPORT TO THE CONVENTION ON BIOLOGICAL DIVERSITY (May 2006), <http://www.cbd.int/doc/world/kh/kh-nr-03-en.pdf>.

54. *Id.*

55. *Briefing Paper 2*, *supra* note 51.

56. *Id.*

57. See REISNER, *supra* note 49. Beyond hydropower, dams provide agricultural benefits for irrigation purposes and flood control. Other “incidental” benefits include recreation areas, the creation of artificial wetlands, and navigational channels. For more information, see *The Problem with Dams*, *supra* note 44. The World Wildlife Federation notes that the reservoirs of some dams have become aquatic estuaries or artificial wetlands. *Id.*

58. Mekong River Commission, For Sustainable Development, The Land and Its Resources, *supra* note 25, at ii; *Imaging Our Mekong, Dams' Impact 'Often Exaggerated'- Cogels*, available at <http://www.newsmekong.org/node/523/>.

59. REISNER, *supra* note 49, at 163, 167.

construction of dams on the Mekong, as the dams “are necessary to provide electricity to millions of people in the region.”⁶⁰

V. GENERAL BARRIERS TO COOPERATION

The lesson of the tragedy of the commons is an apt allusion for the conflicts and issues swirling around the use and development of the Mekong.⁶¹ Just as each herdsman has the incentive to maximize his gain by keeping as many cattle as possible on the shared pastures, each state along the Mekong has the incentive to maximize the benefits from their usage of the river regardless of the potential consequences to others (and the Mekong itself) from the use.⁶²

Following the tragedy of the commons analogy, it should be expected that China would continue constructing dams on the Mekong. From China’s perspective, the potential benefits of “increased local opportunities and prosperity”⁶³ far outweigh the costs to downstream river-dependent communities, ecological systems, and the risk that dam performance “will fall short of economic expectations.”⁶⁴ Even if the market price for cows decreased, the rational herdsman will continue to add animals to his herd in order to maximize his share of potential gains, without regard to the plight of other herdsman.⁶⁵

As long as the damages occur to other “herdsman” along the Mekong, the Chinese government, as a rational being, will continue to act in a manner that most benefits their “herd.”⁶⁶ China places an emphasis on development and attaining wealth before addressing environmental concerns. Therefore, unless China is subject to a binding regulatory framework that protects the Mekong, minimal environmental and ecological impacts will be considered before further construction begins.

Furthermore, the Chinese government is not the only entity whose actions alter the flow of the Mekong.⁶⁷ For example, rice crops in Laos and Thailand are irrigated with “significant amounts” of Mekong River water.⁶⁸ Dams are also being built by other basin states such as Vietnam, Cambodia, and Laos.⁶⁹ The 1994 Run-of-River Hydropower Plan called for the construction of a series of

60. Hawkings, *supra* note 15.

61. Garrett Hardin, *The Tragedy of the Commons*, 162 *SCIENCE* 1243, 1244-45 (1968), available at http://www.garretthardinsociety.org/articles/art_tragedy_of_the_commons.html.

62. *Id.*

63. MEKONG RIVER COMMISSION, OVERVIEW OF THE HYDROLOGY OF THE MEKONG BASIN 5 (Nov. 2005), available at http://www.mrcmekong.org/download/free_download/Hydrology_report_05.pdf.

64. *Id.* at ii, 5.

65. Hardin, *supra* note 61, at 12.

66. Hawkings, *supra* note 15.

67. Pearce, *supra* note 23.

68. *Id.*

69. Hawkings, *supra* note 15.

nine hydropower dams on the Lower Mekong River.⁷⁰ This plan would affect an estimated 61,200 people and increase land pressure in resettlement areas.⁷¹ In fact, development plans created by the Lao government for the construction of dams in the Mekong tributary have been cited as posing a threat to the Irrawaddy dolphin and other fish species.⁷² Dam construction by the downstream states complicate the causation issue, as the damage caused by their own construction could serve as a superseding intervening force that relieves China of liability—or at least, of total liability.

Finally, holding the Chinese government accountable for biodiversity loss and environmental damage reinforces that the downstream states also have a responsibility to minimize biodiversity loss, which is a burden that the basin states may want to ignore in their efforts to modernize. At issue here is the motivation that governs the lower basin states denouncement of Chinese dam building.⁷³ There is always the concern that environmental concerns are “tailored . . . to the interests dictated by their nation’s economic position.”⁷⁴ Finally, mechanisms have to be designed to secure all parties’ compliance with the norms stated by the treaty, an effort that calls for international monitoring and enforcement institutions.⁷⁵

VI. SAVE THE ANIMALS, SAVE THE MEKONG?

A regional agreement implemented through a governing institution is a logical method to guide development and use of the Mekong River Basin. In general, the use of institutions is a preferred manner of managing international water resources such as the Mekong.⁷⁶ Institutions establish rules “to guide the behavior of those who use the river resources or impact on them in one way or another.”⁷⁷ Currently, the Lower Basin states of Cambodia, Lao, Thailand and Vietnam, are all members of the Mekong River Commission (MRC), an institution designed to manage downriver use and development of the Mekong River.⁷⁸

70. Gajaseni et al., *supra* note 9, at 55. In addition to the usual environmental consequences that the construction of dams has the potential to cause, the construction of these nine hydropower dams was expected to displace an estimated 61, 2000 people from their homes along the Lower Mekong River.

71. *Id.*

72. Wiwat Pandawutiyanon, *Irrawaddy Dolphins Disappearing from the Mekong*, *Imaging Our Mekong*, available at <http://www.newsmekong.org/node/127/>.

73. Wolfgang Sachs, *Neo-Development: “Global Ecological Management”*, in *THE CASE AGAINST THE GLOBAL ECONOMY AND FOR A TURN TOWARD THE LOCAL 246* (Mader & Goldsmith eds., Sierra Club 1996).

74. *Id.*

75. *Id.*

76. Frank Marty, *Managing International Rivers: Problems, Politics and Institutions 22* (Peter Lang ed., European University Studies 2001).

77. *Id.*

78. About the MRC, *supra* note 22.

The MRC was established in 1995 by the Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin (hereinafter 1995 Agreement).⁷⁹ “[C]ooperat[ing] in all fields of sustainable development, utilisation [sic], management and conservation of the water and related resources of the Mekong River Basin”⁸⁰ in such areas as “navigation, flood control, fisheries, agriculture, hydropower and environmental protection” are all goals of the MRC.⁸¹ Projects that the Mekong River Commission is currently working on include an Integrated Water Resources Development Strategy for the Lower Mekong Basin Development Strategy, assessing potential environmental problems in early planning phases of development, and developing a trans-boundary environmental assessment system.⁸²

Three articles of the 1995 Agreement directly address the environmental responsibilities of the basin states when developing and using the resources of the Mekong River Basin.⁸³ Article Three states a direct commitment by the parties to protect, among other things, “aquatic life” and the “ecological balance of the Mekong River” Basin from pollution or other harmful effects resulting from any development plans and uses of water and related resources in the Basin.⁸⁴ Article Seven requires the parties to the agreement to “make every effort to avoid, minimize, and mitigate harmful effects” in their development and use of the Mekong River Basin.⁸⁵ Article Seven also emphasizes the importance of minimizing harmful effects to the ecosystem and ecological balance of the Mekong River.⁸⁶ If a state causes substantial damage to the other basin states from its use of the Mekong, Article Eight authorizes that state to be held directly responsible for the harm.⁸⁷

79. *Id.*

80. *Id.*; see also Article 4 of the 1995 Agreement, *infra* note 83. Note that all cooperation is done with the recognition of “sovereign equality and territorial integrity in the utilization and protection of the water resources of the Mekong River Basin.” *Id.*

81. THAILAND, THIRD NATIONAL REPORT MADE TO THE CONFERENCE OF THE PARTIES, FOR THE CONVENTION ON BIOLOGICAL DIVERSITY, <http://www.cbd.int/doc/world/th/th-nr-03-en.pdf> (last visited May 14, 2009) [hereinafter THAILAND, THIRD NATIONAL REPORT].

82. National Biodiversity Strategy and Action Plan, Royal Government of Cambodia Ministry of Environment, April 2002, FAO/UNDP/GEF, Project CMB/98/G33, 71 <http://www.cbd.int/doc/world/kh/kh-nbsap-01-en.pdf>.

83. Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin, art. 3, Apr. 5, 1995, 34 I.L.M. 864. [hereinafter 1995 Agreement]

84. *Id.*

85. See 1995 Agreement, *supra* note 83, art. 7. The text of the Agreement states that “[w]here one or more States is notified with proper and valid evidence that it is causing substantial damage to one or more riparians from the use of and/or discharge to water of the Mekong River, that State or States shall cease immediately the alleged cause of harm until such cause of harm is determined in accordance with Article 8.”

86. *Id.*

87. See 1995 Agreement, *supra* note 83, art. 8. Article 8 states that the parties “shall determine all relative factors, the cause, extent of damage and responsibility for damages caused by that State in conformity with the principles of international law relating to state responsibility” to help discern liability.

The Upper Basin states, China and Myanmar, are not parties to the 1995 Agreement, and are instead “dialogue partners” with the MRC.⁸⁸ As such, China and Myanmar are not bound by any special considerations of ecological balance or aquatic life with their uses and developments of the Mekong. They are also not subject to state responsibility for damages to downstream basin states under the 1995 Agreement.

How then, are the Lower Basin states to ensure that China utilizes Mekong River resources in a way beneficial to all parties? Though the Lower Basin states are part of a regional agreement concerning uses of the Mekong River, the Upper Basin states, Myanmar and China, are not.⁸⁹ Without binding regional agreements to guide China’s or Myanmar’s use of their portion of the Mekong River, there is no instrument to guarantee safeguards or consideration of environmental impacts on downriver states. Due to the lack of a formal agreement explicitly binding China’s cooperation or consideration, recourse for the downstream states will have to be found through alternate avenues such as other environmental agreements that China has ratified.

A. Alternate Avenue One: The Convention on Biological Diversity

1. Background

The Convention on Biological Diversity (CBD) was adopted at the 1992 Earth Summit in Rio de Janeiro,⁹⁰ and entered into force on December 29, 1993.⁹¹ The main objective of the Convention is to conserve biological diversity in light of the effect that “certain human activities” have on biological diversity.⁹² Also emphasized is the “importance . . . and need to promote, international, regional, and global cooperation among States” in order to achieve the Convention’s objectives.⁹³

Biological diversity, or biodiversity, is defined as “the variability among living organisms from all sources,” and includes not just the organisms themselves, but the ecosystems and ecological complexes where the organisms can be found.⁹⁴ Biodiversity is necessary for the habitability of the planet,⁹⁵ and

88. About the MRC, *supra* note 22.

89. *Id.*

90. Secretariat of the Convention on Biological Diversity, *Sustaining Life on Earth: How the Convention on Biological Diversity Promotes Nature and Human Well-Being* 2 (Apr. 2000).

91. *Id.*

92. Convention on Biological Diversity, pmbl, art. 1, June 5, 1992, 1760 U.N.T.S. 143 (1993), available at <http://www.cbd.int/convention/convention.shtml>.

93. *Id.* pmbl.

94. *Id.* art. 2.

95. Secretariat of the Convention on Biological Diversity, *supra* note 90, at 4-5.

without it ecosystems are destabilized, making the areas with weakened ecosystems more susceptible to natural disasters.⁹⁶

2. *Law of the Convention*

The CBD envelops several of the principles stated in the Rio Declaration, another of the five documents signed at the Earth Summit.⁹⁷ Specifically, the sovereign right of a State to utilize and exploit the resources within their country, the second principle in the Rio Declaration, is unequivocally affirmed in the Convention.⁹⁸ However, unlike the Rio Declaration, the Convention is a binding instrument⁹⁹ that places an affirmative duty on member States to ensure that their actions do not harm “the environment of other States” or “areas beyond the limits of national jurisdiction.”¹⁰⁰ This duty applies to activities carried out by the State, or under its control “regardless of where their effects occur,” whether within or beyond the “area of national jurisdiction.”¹⁰¹ Creating a national strategy to implement the Convention on Biological Diversity is a key obligation for ratifying parties.¹⁰²

Evaluating environmental damage can be done through several different methods, from “the costs of measures undertaken, or undertake to prevent environmental damage” to “loss of income from an economic interest in the use or enjoyment of the environment” caused by detriment to the environment.¹⁰³ Monetary compensation is not the sole form of redress for environmental damage, and in cases such as loss of biodiversity, remedies can include environment restoration or criminal sanctions.¹⁰⁴

If harm is done to biological diversity within the jurisdiction of another state, the State who has caused the harm can be held responsible for the harm by the

96. *Id.* at 6.

97. U.N. Conference on Env't & Dev., June 3-14, 1992, *Rio Declaration on Environment and Development*, U.N. Doc. A/CONF.151/26 (Vol. I) (Aug. 12, 1992), available at <http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm> [hereinafter *Rio Declaration*]; Edward A. Parson et al., *A Summary of the Major Documents Signed at the Earth Summit and the Global Forum*, <http://www.ciesin.org/docs/003-312/003-312.html> (last visited May 14, 2009); Earth Summit, UN Conference on Environment & Development (1992), <http://www.un.org/geninfo/bp/enviro.html> (last visited May 14, 2009).

98. See *Rio Declaration*, *supra* note 97, prin. 2; Convention on Biological Diversity, *supra* note 92, art. 3; Agenda 21 for Change, *Rio Declaration on Environment and Development*, <http://www.iisd.org/rio+5/agenda/declaration.htm> (last visited May 14, 2009) (noting that the purpose of the Rio Declaration is to create principles to guide future development).

99. Tomme R. Young, *An Implementation Perspective on International Law of Genetic Resources: Incentive, Consistency, and Effective Operation*, 15 Y.B. INT'L ENVTL. L. 3, 5 (Fauchald et al. eds., 2004) (2006).

100. Convention on Biological Diversity, *supra* note 92, art. 3.

101. *Id.* art. 4.

102. National Biodiversity Strategy and Action Plan, *supra* note 82, at 5.

103. Phillippe Cullet, *Liability and Redress for Modern Biotechnology*, 15 Y.B. INT'L ENVTL. L. 165, 172 (Fauchald et al. eds., 2004) (2006).

104. *Id.* at 165, 172.

governing body of the Convention, the Conference of the Parties.¹⁰⁵ The Conference of the Parties has the ability under the Convention to order recompense for damages and provides a method for the resolution of disputes through negotiation, mediation, or as a final recourse, arbitration or submission of the dispute to the International Court of Justice (ICJ).¹⁰⁶ Any member of the United Nations who is a party to a dispute heard by the ICJ has an obligation to comply with any decision by the ICJ.¹⁰⁷ However, parties have discretion to determine how to affect compliance with the ICJ decision.¹⁰⁸

If a party objects to the means of compliance by the redressing party, the Security Council of the UN can enforce compliance if the parties cannot mediate the dispute.¹⁰⁹

3. National Implementation of the CBD

a. Thailand

Thailand officially ratified the Convention on Biological Diversity (CBD) on October 31, 2003.¹¹⁰ The Ministry of Natural Resources and Environment (MONRE) is at the heart of Thailand's administration and management of environmental conventions, and responsible for the domestic implementation of the CBD.¹¹¹ Established in October 2002, MONRE initially worked to develop strategic plans on the issue of biological diversity, eventually delegating this task to national committees that were created by MONRE.¹¹²

Working as a bridge between these national committees is the Biological Diversity Division.¹¹³ The Biological Diversity Division creates plans for conservation and for the sustainable use of biological diversity in Thailand, and is the National Focal Point for administering the CBD.¹¹⁴ The division reports directly to the Secretary of the Office of Natural Resources and Environmental Policy and Planning (ONEP), a subdivision of MONRE.¹¹⁵ In January 2007,

105. Convention on Biological Diversity, *supra* note 92, art. 14, § 2.

106. *Id.* art. 27 §§ 1-3.

107. CONSTANZE SCHULTE, COMPLIANCE WITH DECISIONS OF THE INTERNATIONAL COURT OF JUSTICE 18 (Sands et al., eds. 2004).

108. *Id.*

109. *Id.* at 19.

110. Thailand Clearing House Mechanism, Thailand and the Convention on Biological Diversity, http://chm-thai.onep.go.th/CHM/convention_eng2.html (last visited May 14, 2009).

111. THAILAND, THIRD NATIONAL REPORT, *supra* note 81, at 4.

112. *Id.*

113. Thailand Clearing House Mechanism, Biological Diversity Division Duties and Responsibilities, http://chm-thai.onep.go.th/CHM/biodiv_en.html (last visited May 14, 2009).

114. *Id.*

115. *Id.*

2009 / Biodiversity Conservation v. Hydropower Dams

Thailand was in the process of finalizing a law on biodiversity to be completed by early 2008.¹¹⁶

b. Vietnam

The CBD has been implemented in Vietnam through the Law on Environment Protection, Vietnam Biodiversity Action Plan of 1995, and the Draft Vietnam Biodiversity Action Plan to 2010 and vision toward 2015.¹¹⁷ The 1995 Biodiversity Action Plan states Vietnamese commitment to protecting biodiversity, and specifically targets “rare and precious animals” for protection.¹¹⁸ However, though Vietnam has made efforts to institute biodiversity conservation measures, the government is concerned with its inability to effectively negotiate and conduct international agreements regarding biodiversity.¹¹⁹ In 2006, Vietnam amended its Law on Environmental Protection to allow the government to penalize those whose actions negatively impact the environment.¹²⁰

c. Cambodia

Cambodia became a party to the CBD by accession on February 9, 1995.¹²¹ As the responsibilities for biodiversity conservation and sustainable use development are shared among several Cambodian governmental departments, the National Biodiversity Steering Committee was established in April 2001.¹²² Comprised of representatives from all relevant departments responsible for conserving biodiversity,¹²³ the committee was established to avoid a “lack of interministerial coordination.”¹²⁴ The committee is responsible for creating a Cambodian National Biodiversity Strategy and Action Plan to ensure that Cambodia meets its obligations under the CBD.¹²⁵ Like Thailand, current biodiversity legislation in Cambodia is being revised, with changes to the 1996

116. Jonathan Hopfner, *Thailand: Laws on Biodiversity*, 30, NO. 2 INT’L ENV’T REP. S-29 (2007).

117. VIETNAM, THIRD NATIONAL REPORT MADE TO THE CONFERENCE OF THE PARTIES, FOR THE CONVENTION ON BIOLOGICAL DIVERSITY 4, 19, available at <http://www.cbd.int/doc/world/vn/vn-nr-03-en.pdf> (last visited May 14, 2009).

118. *Id.* at 18.

119. *Id.* at 6, 8.

120. Jonathan Hopfner, *Vietnam: Implementation of Framework Law May Entail Environmental Taxes, Fees*, 30, NO. 2 INT’L ENV’T REP. VOL. S-30 (2007). The punishments range from extra taxes to fees depending on the damage done. *Id.*

121. Convention on Biological Diversity, List of Parties, <http://www.cbd.int/information/parties.shtml> (last visited May 14, 2009) [hereinafter List of Parties].

122. National Biodiversity Strategy and Action Plan, *supra* note 82, at 70.

123. *Id.* at 3. The other departments include those such as the Ministry of Agriculture, Forestry and Fisheries; Ministry of Land Management, Urban Planning and Construction; Ministry of Rural Development; and Ministry of Water Resources and Meteorology.

124. *Id.* at 70.

125. *Id.* at 3.

Law on Environmental Protection and Natural Resource Management still in process.¹²⁶

d. Myanmar

Myanmar ratified the CBD on November 25, 1994¹²⁷. The Environmental Conservation Committee, comprised of the Deputy Ministers from all relevant governmental departments and headed by the Minister of Forestry, is responsible for the development of environmental programs.¹²⁸

A National Biodiversity Strategy and Action Plan to ensure that the CBD obligations have been met has yet to be completed, however, the Fresh Water Fisheries Law of 1991 promotes “conservation of biodiversity and sustainable use of its components.”¹²⁹

e. China

China ratified the CBD on January 5, 1993.¹³⁰ Led by the State Environmental Protection Administration, the National Coordination Committee for Implementation of the CBD was created to guide China’s enforcement of the CBD through China’s Biodiversity Conservation Action Plan.¹³¹ In accordance with its Biodiversity Conservation Action Plan, China is engaged in multilateral cooperation through participation in the Greater Mekong Subregion Biodiversity Conservation Corridors, but is not party to a binding regional agreement to enforce or enact biodiversity conservation measures.¹³²

126. *Id.* at 70.

127. List of Parties, *supra* note 121.

128. MYANMAR, THIRD NATIONAL REPORT ON BIODIVERSITY 23, available at <http://www.cbd.int/doc/world/mm/mm-nr-03-p1-en.pdf> (last visited May 14, 2009).

129. *Id.* at 16.

130. List of Parties, *supra* note 121.

131. Biodiversity Clearing House Mechanism of China, National Coordination Committee for CBD Implementation of China, http://english.biodiv.gov.cn/CBD1/200603/t20060323_30686.htm (last accessed May 14, 2009). The National Coordination Committee for Implementation of the CBD is comprised of twenty two ministries and departments, the Ministry of Foreign Affairs; State Development and Reform Commission; Ministry of Education, Ministry of Science and Technology; Ministry of Public Security; Ministry of Finance; Ministry of Construction; Ministry of Agriculture; Ministry of Commerce; Ministry of Health; State Forestry Administration; State Administration of Radio, Film and TV; State Administration of Industry and Commerce; General Customs Administration; Xinhua News Agency; Chinese Academy of Sciences; State Intellectual Property Office; State Oceanic Administration; State Traditional Chinese Medicine Administration; People’s Daily; and Guangming Daily. *Id.*

132. STATE ENVIRONMENTAL PROTECTION ADMINISTRATION OF CHINA, CHINA’S THIRD NATIONAL REPORT ON IMPLEMENTATION OF THE CONVENTION ON BIOLOGICAL DIVERSITY 79, 158 (Sep. 15, 2005), available at <http://english.biodiv.gov.cn/image20010518/5569.pdf>. The Greater Mekong Subregion Biodiversity Conservation Corridors are organized by the Asian Development Bank.

4. Case Law and the CBD

Generally, liability for environmental damage is incurred when certain conditions are met.¹³³ As Phillippe Cullet, author of *Liability and Redress for Modern Biotechnology* notes, the actor causing the harm must be directly identifiable.¹³⁴ Next, the scope of damage for which the actor is allegedly liable must be determined.¹³⁵ Finally, the issue of causality must be addressed.¹³⁶ Whether the actor is the proximate cause of the environmental damage is always an issue,¹³⁷ as it must be determined whether actions by the actor are too “distant in space or time from the impacts” to incur liability.¹³⁸

a. *Argentina v. Uruguay: The Pulp Mills Case*

The example of *Argentina v. Uruguay* (also known as the Pulp Mills Case) is currently being heard in the International Court of Justice (ICJ), and it is analogous to a case that the Lower Basin states could bring against China.¹³⁹ Though the case has not yet been decided, there are several factual similarities—and some key distinguishing facts—that may prove informative should the Lower Basin states pursue a judicial remedy against China for environmental damages from hydropower dam construction.

In May 2006, Argentina brought suit against Uruguay in the ICJ, claiming that the Uruguayan government had authorized the construction of pulp mills without complying with “the obligatory prior notification and consultation procedure” mandated by a 1975 treaty between the two states.¹⁴⁰ Construction of the pulp mills, located on the shared watercourse of the River Uruguay, was “advancing at a rapid rate.”¹⁴¹ In its suit, Argentina asked the ICJ to find that

133. Cullet, *supra* note 103, at 173.

134. *Id.* Though this article focuses on establishing liability for environmental damage caused by genetically modified organisms (GMO's) under the Cartagena Protocol on Biosafety to the Convention on Biological Diversity, the basics principles establishing liability for environmental damage remain the same. *Id.*

135. *Id.*

136. *Id.*

137. *Id.*

138. *Id.*

139. See Press Release, International Court of Justice, Pulp Mills on the River Uruguay (*Argentina v. Uruguay*) The Court Authorizes Submission of a Reply by Argentina and a Rejoinder by Uruguay and Fixes Time-limits for the Filing of These Pleadings, No. 2007/20 (Sept. 17, 2007), available at <http://www.icj-cij.org/docket/files/135/14037.pdf?PHPSESSID=0146018e65846bb73b2a0aee5346fedc>.

140. Press Release, International Court of Justice, Argentina Institutes Proceedings Against Uruguay and Requests the Court to Indicate Provisional Measures (May 4, 2006), available at <http://www.icj-cij.org/docket/index.php?pr=1010&p1=3&p2=1&case=135&p3=6>. This proceeding is an adversarial proceeding (contentious issue), as opposed to a request that the ICJ issue an advisory opinion. The purpose of an adversarial hearing is for the ICJ to issue a binding ruling settling the dispute. *Id.*

141. Case Concerning Pulp Mills on the River Uruguay (*Argentina v. Uruguay*), 2006 ICJ Lexis 9, 18 (June 8).

Uruguay was in breach of the 1975 treaty, and in violation of other rules of international law such as:

[T]he obligation to take all necessary measures to preserve the aquatic environment and prevent pollution and the obligation to protect biodiversity and fisheries, including the obligation to prepare a full, objective study on environmental impact . . . [and] the obligation to cooperate in regard to the prevention of pollution and the protection of biodiversity and fisheries¹⁴²

Argentina included several supporting documents in its application for relief.¹⁴³ One statement alleged that Uruguay had violated its commitments under the principles of the Rio Declaration and general international environmental law.¹⁴⁴ Specifically, this statement noted that Uruguay had the obligation to not only refrain from causing environmental harm in Argentina, but to warn the Argentine government if Uruguay suspected that its actions would cause environmental damage in Argentina.¹⁴⁵

Argentina also requested interim injunctive measures that would prevent further construction on the Uruguay pulp mills in order to prevent economic and societal harm.¹⁴⁶ In support of its argument, Argentina presented evidence that the mills would emit “dangerously toxic waste” and contaminate the River Uruguay with “1,500 million cubic metres of polluted water.”¹⁴⁷ The Argentine government cited cellulose, mercury, dioxins, and cyanide as examples of the toxic effluents that would be emitted from the plants into the River Uruguay.¹⁴⁸ The pollution from the pulp mills would flow from the mills built on the Uruguayan side of the river through the River Uruguay,¹⁴⁹ a shared watercourse

142. Press Release, *supra* note 140.

143. See Application Instituting Proceedings, Case Concerning Pulp Mills on the River Uruguay (Argentina v. Uruguay) (May 4, 2006), available at <http://www.icj-cij.org/docket/files/135/10779.pdf>.

144. *Id.* at 86-87.

145. *Id.* at 87.

146. Press Release, *supra* note 140.

147. Case Concerning Pulp Mills on the River Uruguay, *supra* note 141, at 19-20. Cf. Fred Pearce, *Dead in the Water: Cyanide Fishing Killing Coral Reefs in the Philippines*, CYBER DIVERS NEWS NETWORK, <http://www.cdnn.info/news/article/a030429.html> (last visited May 14, 2009) (linking the presence of cyanide in the water to the death of local coral and algae); U.S. Environmental Protection Agency, Environmental Affects: Fate and Transport and Environmental Effects of Mercury, <http://www.epa.gov/hg/eco.htm> (last visited May 14, 2009) (discussing how airborne mercury can infiltrate water resources where it can mix with microorganisms to create methylmercury. Wildlife exposure to methylmercury can be fatal, reduce fertility, impair growth and have other detrimental effects depending on the amount of the substance that the wildlife is exposed to); National Institute of Environmental Health Sciences, Dioxins, <http://www.niehs.nih.gov/health/topics/agents/dioxins/index.cfm> (last accessed May 14, 2009) (explaining the toxic effects of dioxins on humans, such as increased risks of cancer, diabetes, and heart disease).

148. Case Concerning Pulp Mills on the River Uruguay, *supra* note 141, at 21.

149. *Court Allows Uruguay Pulp Mills*, BBC NEWS, <http://news.bbc.co.uk/2/hi/americas/5175420.stm> (last updated July 13, 2006) (last accessed May 14, 2009).

of approximately 1,600 kilometers.¹⁵⁰ According to studies cited by Argentina, the effects of cellulose on animal species are “severe and irreversible” affecting reproductive capacities, metabolic rates, and respiratory functions.¹⁵¹ Professor Phillippe Sands, a professor at the University of London, further supported Argentina’s request for interim injunctive measures, and argued that two articles found in the 1975 statute imported obligations from the Convention on Biological Diversity and committed the parties to protect biodiversity.¹⁵²

Though Argentina’s request for an injunction halting the construction of the pulp mills until further environmental assessments were made was ultimately denied, the case is still before the International Court of Justice for determination of the merits of the case.¹⁵³ The resolution of this case could be valuable in providing legal precedent should the Lower Basin states pursue legal action against China. This case could establish the burden of proof and type of environmental harm necessary for a state to incur liability based on extraterritorial environmental harm to biodiversity.

5. Application

All five states surrounding the Mekong River Basin are signatories of the Convention on Biological Diversity, which addresses the threshold issue of whether the Convention is applicable to those countries.

Under the terms of the Convention, which China is contractually obligated to uphold as a signatory, China has the right to use the waters of the Mekong in a manner that benefits its citizens.¹⁵⁴ However, China also has the duty to ensure that those acts do not have a detrimental effect on the biodiversity of its neighboring states.¹⁵⁵ Though China has made ongoing efforts to meet its obligations under the Convention, implementation of the Convention is still underway.¹⁵⁶ In 2004, although China was a party to several international meetings on the issues of conservation and biodiversity, none addressed the biodiversity issues facing the Mekong River.¹⁵⁷

150. Case Concerning Pulp Mills on the River Uruguay, *supra* note 141, at 14.

151. See Case Concerning Pulp Mills on the River Uruguay, *supra* note 141, at 21. For a discussion on the pulp making process, including the toxic effects and possible ways to mitigate the toxic harms, see William Murray, *Pulp and Paper: The Reduction of Toxic Effluents*, Public Works and Government Services Canada Science & Tech. Dept., BP-292A (April 1992), available at <http://dsp-psd.pwgsc.gc.ca/Collection-R/LoPBdP/BP/bp292-e.htm>.

152. Case Concerning Pulp Mills on the River Uruguay, *supra* note 141.

153. *Court Allows Uruguay Pulp Mills*, *supra* note 149.

154. Convention on Biological Diversity, *supra* note 92, arts. 3-4.

155. *Id.*

156. *Country Reports: China*, 15 Y.B. INT’L ENVTL. LAW 513, 518 (Ole Kristian Fauchald, et. al. eds., 2004) (2006).

157. *Id.*

Additional dam construction on the Mekong River by China may “lead to a decline in biodiversity” due to the disruption of sediment flow by the dams.¹⁵⁸ Many of the 1,300 types of fish are adapted to favorable “feeding and spawning conditions” that result from the “sediment rich Mekong.”¹⁵⁹ Altering the river flow to fill the reservoirs of the hydroelectric dams¹⁶⁰ effects the natural drought-flood cycle of the Lower Basins, which in turn will have a detrimental affect on the “fish feeding, spawning, and nursery grounds” in the “flooded forests of southern Laos and Cambodia” that is dependent on the natural cycle.¹⁶¹

The Lower Basin states of Laos, Cambodia, and Vietnam are also home to the Irrawaddy dolphin.¹⁶² Freshwater populations of this species only occur in three river systems; the Mekong River being one.¹⁶³ The species is on the International Union for the Conservation of Nature and Natural Resources—also known as IUCN or World Conservation Union—Red List as a critically endangered species.¹⁶⁴ There are debates as to whether their status is a result of habitat loss from the uneven water flow of the Mekong due to China’s dams, or whether their endangered status is a result from dolphins being caught in fishing nets.¹⁶⁵ If a causal connection can be shown between the construction of China’s hydropower dams and a further decrease in the Irrawaddy dolphin and fish populations, the Lower Basin states can establish a case for China’s violation of the terms of the Convention on Biological Diversity.¹⁶⁶

However, showing a causal connection between the environmental damage to the downstream states of the Mekong and the construction of dams by the Chinese could prove to be difficult as there are other potential causes for the decreased Mekong River flows.¹⁶⁷ Stating that “the overall downstream impact” of the hydropower dams built by the Chinese is “often exaggerated in the public opinion,” the head of the Mekong River Commission noted that evidence supported his belief that “Chinese dams are not responsible” for the droughts facing the downstream countries.¹⁶⁸ If the head of the regional institution established to manage Lower Basin development of the Mekong River does not support the allegations that China is responsible for downstream environmental harm, it might be difficult for the downstream states to garner sufficient support for their position.

158. *Briefing Paper 3, supra* note 39.

159. *Id.*

160. MCCAFFREY, *supra* note 42, at 286.

161. *Briefing Paper 3, supra* note 39.

162. World Conservation Union Species Survival Commission, The IUCN Red List of Threatened Species, <http://www.iucnredlist.org/search/details.php/15419/all> (last visited May 18, 2009).

163. *Id.*

164. *Id.*

165. *Id.*

166. See Convention on Biological Diversity, *supra* note 92, art. 14 § 2.

167. *Imaging Our Mekong, Dams' Impact 'Often Exaggerated'- Cogels, supra* note 58.

168. *Id.*

If the final outcome of *Argentina v. Uruguay* results in Uruguayan liability as a result of the construction of the paper mills, then use of that case as precedent for the Lower Basin states would be beneficial. Both cases involve a shared international watercourse, and both involve unilateral acts done by one state that are allegedly causing environmental harm to the other states.¹⁶⁹

6. *Potential Problems*

If non-judicial attempts to solve issues of rights along the Mekong River should fail, resort to the ICJ might be difficult due to cultural issues as Asian countries “resort to the ICJ less frequently.”¹⁷⁰ Historical tensions between the neighboring Southeast Asian countries might also prove to be a barrier to cooperative implementation of measures to safeguard rights and protect biodiversity.¹⁷¹ Relations between Cambodia and Thailand are marred by a “climate of mutual resentments and lack of trust,”¹⁷² which might affect compliance with arbitral or ICJ decisions.¹⁷³

Furthermore, enforcement of a judgment against China may be difficult. If China does not comply with the decision of the International Court of Justice, enforcement of the judgment falls to the UN Security Council.¹⁷⁴ However, as China is a permanent member of the Security Council,¹⁷⁵ there is always a chance that China could veto any Security Council action made to enforce the judgment against it.¹⁷⁶

7. *Conclusion*

Unless the Lower Basin states can show that the source of diminishing biodiversity in the Mekong River Basin is the result of the building of dams in China, it is unlikely that they will be able to attain redress under the Convention on Biological Diversity. However, the Lower Basin states can at least appeal to the Conference of the Parties to put the preservation of species endemic to the

169. See *Court Allows Uruguay Pulp Mills*, *supra* note 149 (Argentina and Uruguay both border the River Uruguay); *Briefing Paper 3*, *supra* note 39.

170. SCHULTE, *supra* note 107, at 1.

171. *Id.* at 136.

172. *Id.*

173. *Id.*

174. *Id.* at 30.

175. UN Security Council Members, Membership in 2008, <http://www.un.org/sc/members.asp> (last visited Mar. 4, 2008) (other permanent members include France, the Russian Federation, the United Kingdom, and the United States).

176. See SCHULTE, *supra* note 107, at 55-56. The author notes the existence of an obligatory abstention rule, and its limited application to actions proceeding under Article 27(3) of the UN Charter. However, obligatory abstention is not required for decisions made under Article 94(2). For a further discussion on how the Security Council choose the appropriate procedure on which to proceed, please see CONSTANZE SCHULTE, COMPLIANCE WITH DECISIONS OF THE INTERNATIONAL COURT OF JUSTICE (Sands et al., eds. 2004).

Mekong River Basin as a priority project. This will ensure that not only China, but the other Mekong River Basin states must take into consideration the environmental effects of developments on the Mekong.

B. Alternate Avenue Two: 1997 United Nations Convention

The Convention on the Law of the Non-navigational Uses of International Watercourses (hereinafter 1997 Convention) was adopted by the General Assembly of the United Nations on May 21, 1997, but has yet to enter into force.¹⁷⁷ The 1997 Convention applies to the use, protection, preservation, and management of international watercourses “for purposes other than navigation.”¹⁷⁸

Like the Convention on Biological Diversity (CBD), the 1997 Convention imposes on watercourse states the obligation to prevent “significant harm” to other watercourse states when utilizing a shared international watercourse.¹⁷⁹ However, unlike the CBD, under the 1997 Convention, compensation for harm is something to be discussed between the parties.¹⁸⁰ Unlike the CBD, there is no governing body such as the Conference of the Parties to order recompense or assign liability.¹⁸¹

Disputes under the 1997 Convention are governed by Article 33.¹⁸² If parties are unable to negotiate or come to an amicable agreement for the dispute, the 1997 Convention provides for three options to settle the dispute.¹⁸³ Parties may seek mediation by a third party, submit the dispute to arbitration, or bring the dispute before the International Court of Justice.¹⁸⁴ Procedural and substantive requirements for arbitration proceedings are outlined in the annex to the 1997 Convention, though parties are free to agree to other terms for arbitration.¹⁸⁵

If, after six months the dispute has not been resolved despite the use of one of the above methods, the 1997 Convention provides that a commission be

177. Convention on the Law of the Non-navigational Uses of International Watercourses, May 21, 1997, 36 I.L.M. 700 [hereinafter 1997 Convention], available at http://untreaty.un.org/ilc/texts/instruments/english/conventions/8_3_1997.pdf.

178. *Id.* art. 1.

179. *Id.* art. 7 § 1; cf. Press Release, United Nations General Assembly, Statements Made on the Convention on International Watercourse, U.N. Doc. GA/9248 (May 21, 1997). There were mixed feelings regarding the language of Article 7. Ahmad Kamal, the representative from Pakistan noted that the ambiguity of the word “significant” before harm left the term open to multiple definitions. He further suggested binding and obligatory settlement procedures. However, Berhanemeskel Nega from Ethiopia felt that the language of the 1997 Convention, specifically article 7 and Part III, benefited lower riparians at the expense of upper riparians who would bear an undue burden in implementing the terms of the Convention. *Id.*

180. *Id.* art. 7 § 2.

181. *Id.*; Convention on Biological Diversity, *supra* note 92, art. 14 § 2.

182. 1997 Convention, *supra* note 179, art. 33.

183. *Id.* art. 33 § 2.

184. *Id.*

185. *Id.* annex.

established. The 1997 Convention dictates specific procedures and requirements that the Commission must follow.¹⁸⁶ However, though the Commission will eventually set forth its findings and make recommendations for an “equitable solution to the dispute,” parties are not obligated by the terms of the Convention to adopt those recommendations.¹⁸⁷ Instead, parties merely have the obligation to consider the recommendations “in good faith,” and the 1997 Convention does not provide for any enforcement mechanism.¹⁸⁸

Unfortunately, though the purpose of the 1997 Convention is to provide guidance to states in creating agreements concerning specific watercourse, the convention has not been ratified.¹⁸⁹ Furthermore, none of the states of the Mekong River Basin are parties to the convention.¹⁹⁰ Though the 1997 Convention would undoubtedly be beneficial in aiding the basin states to come to an agreement regarding the uses of the Mekong River, its use as a legal tool is limited. Even if the 1997 Convention entered into force and all of the Mekong River Basin states were bound as parties to the convention, the lack of an enforcement mechanism in the 1997 Convention would still be a barrier to overcome before redress could be had.

VII. CONCLUSION

Ultimately, the issues surrounding usage of the Mekong River Basin are far more subtle and complex than they first appear. Although China has constructed two dams and plan to build more, what are the underlying motivations behind the downstream denouncement of the construction? Are the concerns truly based on environmental and ecological ramifications, such as the loss of the diverse fish species that populate the Mekong? Or, are the downstream states more concerned with the idea that China is benefiting from its use of the Mekong River commons at a faster rate than the other herdsman?

Though the use of an international convention as a legal avenue may be successful in drawing international attention to the problems surrounding development and conservation of the Mekong River Basin, obtaining a judgment for the downstream states to halt dam construction in China will be difficult to obtain and enforce. Ultimately, the solution to the dilemmas surrounding use of the Mekong River Basin is not as simple as halting dam construction by China. Given the benefits that dams can actually provide, the solution to the controversy

186. *Id.* art. 33 §§ 4-9.

187. *Id.* art. 33 § 8.

188. *Id.*

189. See Press Release, *supra* note 179; International Water Law Project, Status of the Watercourse Convention, http://internationalwaterlaw.org/intldocs/watercourse_status.html (last updated Jan. 9. 2008) (last visited Mar. 4, 2008). As this website notes, per Article 36(1), the 1997 Convention will not enter into effect until the “thirty-fifth instrument of ratification, acceptance, approval, or accession” is deposited with the Secretary-General of the UN. To date, there are only 16 parties to the Convention. *Id.*

190. *Id.*

surrounding dam construction on the Mekong River Basin is a binding regional agreement, of which China would be a party, to guide sustainable use and development of the Mekong River Basin. It is unlikely that anything less than a binding regional agreement will be effective to dictate China's construction on the Mekong River Basin and to ensure cooperative use of Mekong River Basin resources.

Furthermore, successful use of an international convention such as the Convention of Biological Diversity or the 1997 Convention (after it is in force) can only occur if environmental and ecological concerns are the motivating force behind the downstream states' desire to hold China accountable for environmental damage and biodiversity loss in the Mekong River Basin. Even then, use of the CBD is a tenuous prospect, as not many cases have been brought before the International Court of Justice using that convention as the basis of a cause of action.

However, if the downstream states are more concerned that China is utilizing the Mekong River as a means to monopolize all sources of potential benefits, a more serious result may occur. The traditional outcome in the tragedy of the commons saga would be the likely result, and the natural beauty of the Mekong River and its abundant, diverse species of animals would be depleted and lost to maximize gains. A binding regional agreement dictating the terms of use and utilization of the Mekong River Basin is the only way to accomplish a balance between biodiversity conservation and development and save the Mekong River Basin.

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