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Playing Chicken with Bird Flu: "Viral Sovereignty," the Right to Exploit Natural Genetic Resources, and the Potential Human Rights Ramifications

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**PLAYING CHICKEN WITH BIRD FLU: “VIRAL
SOVEREIGNTY,” THE RIGHT TO EXPLOIT
NATURAL GENETIC RESOURCES, AND THE
POTENTIAL HUMAN RIGHTS
RAMIFICATIONS**

KENAN MULLIS*

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INTRODUCTION

In January 2007, Siti Fadilah Supari, Indonesia's Minister of Health, alerted the World Health Organization ("WHO") that her country would no longer submit samples of locally-discovered avian influenza viruses for international research.¹ Rejecting a half-century custom of free virus-sharing,² Indonesia claimed a sovereign right of

1. *See Indonesia to Stop Formally Announcing Bird Flu Deaths*, USA TODAY, June 5, 2008, available at http://www.usatoday.com/news/health/2008-06-05-indonesia-birdflu_N.htm[hereinafter *Formally Announcing*] (citing concerns that the samples would be used to develop vaccines that Indonesia and other developing countries could not afford).

2. *See* Peter Gelling, *Indonesia Defiant on Refusal to Share Bird Flu Samples*, N.Y. TIMES, Mar. 26, 2007, available at <http://www.nytimes.com/2007/03/26/world/asia/26cnd-flu.html> (explaining that currently, the custom is for contributing countries to send samples to WHO-affiliated labs in the United States, Britain, Japan, and Australia, which then develop prospective vaccines). Virus-sharing is a

ownership over virus strains found within its borders.³ As the site of an overwhelming number of the world's human avian influenza incidences,⁴ Indonesia's cooperation is critical to international efforts to check the virus that has the potential to become the next worldwide pandemic.⁵

This Comment explores the legality of Indonesia's decision to withhold avian influenza samples from the international community and argues that, while viruses are sovereign property under the U.N. Convention on Biological Diversity ("CBD"), Indonesia is violating the International Covenant on Economic, Social and Cultural Rights' ("ICESCR") guaranteed right to health. Part I offers background information on avian influenza and Indonesia's history with the virus.⁶ Additionally, Part I introduces two international laws that are implicated by Indonesia's decision to withhold virus samples: the CBD⁷ and the ICESCR.⁸ Part II.A contends that although viruses are sovereign property under the CBD, but that Indonesia may nevertheless be violating it.⁹ Parts II.B and II.C further argue that

process by which countries donate virus specimens to internationally-cooperative laboratories for research and vaccine development purposes.

3. See Siti Fadilah Supari, Minister of Health of the Republic of Indonesia, Address Before the 60th World Health Assembly (May 16, 2007), *available at* <http://www.depkes.go.id/en/1605th.htm> [hereinafter Supari Address] (invoking the U.N. Convention on Biological Diversity as the legal basis for sovereign ownership of local viruses).

4. See, e.g., *More than 80 Pct of Indonesia Bird Flu Cases Die*, REUTERS, Aug. 13, 2008, <http://www.reuters.com/article/americasCrisis/idUSN13258075> [hereinafter *More Bird Flu Cases Die*] (reporting that Indonesia is home to one-third of all human avian influenza infections and the local mortality rate from this virus is notably higher than the global rate).

5. See Aubrey Belford, *Indonesia's Bird Flu Warrior Takes on the World*, MACAU DAILY TIMES, Dec. 8, 2008, *available at* http://www.macaudailytimesnews.com/index2.php?option=com_content&task=view&id=20100&Itemid= (explaining that a viral mutation that leads to easy inter-human transmission could cause millions of deaths and that such a mutation would most likely occur in Indonesia).

6. See discussion *infra* Part I (explaining that human-to-human avian influenza transmission is currently rare, that the virus has hit Indonesia harder than any other country, and that Indonesia freely shared virus samples until 2007).

7. United Nations Convention on Biological Diversity, June 5, 1992, 1760 U.N.T.S. 79 [hereinafter CBD].

8. International Covenant on Economic, Social, and Cultural Rights, Dec. 16, 1966, 999 U.N.T.S. 3 [hereinafter ICESCR].

9. See discussion *infra* Part II (determining that viruses are genetic resources under the CBD and examining the CBD's prohibition on harming other countries')

Indonesia is violating the ICESCR by withholding virus samples.¹⁰ Part III recommends the solicitation of an advisory opinion from the International Court of Justice (“ICJ”),¹¹ the reformation of the international virus-sharing system,¹² and Indonesia’s return to compliance with international law.¹³

I. BACKGROUND

H5N1 avian influenza, or “bird flu,” is a potentially lethal, naturally-occurring virus in birds.¹⁴ The WHO recorded the first case of a bird-to-human avian influenza transmission in Hong Kong in 1997.¹⁵ Although human-to-human avian influenza transmission currently remains rare,¹⁶ if the virus became easily communicable among humans, the consequence could be pandemic.¹⁷

biological diversity).

10. See discussion *infra* Part II (concluding that Indonesia’s policy is a deliberately retrogressive measure and interferes with other countries’ right to health).

11. See discussion *infra* Part III.A (asserting that an ICJ advisory opinion on the legality of withholding virus samples would carry enough weight to break the current stalemate).

12. See discussion *infra* Part III.B (arguing for a system whereby cooperative nations will receive greater access to discounted vaccines).

13. See discussion *infra* Part III.C (advocating Indonesia’s resumption of virus-sharing in light of the magnitude of dangers posed by non-compliance).

14. See Centers for Disease Control and Prevention, *Fact Sheet: Key Facts About Avian Influenza (Bird Flu) and Avian Influenza A (H5N1) Virus*, at 1 (Dep’t of Health & Human Serv. June 30, 2006), http://www.cdc.gov/flu/avian/gen-info/pdf/avian_facts.pdf [hereinafter *Key Facts*] (reporting that the highly pathogenic form of avian influenza can kill between ninety and one hundred percent of infected birds within forty-eight hours).

15. See WORLD HEALTH ORG. [WHO], *Avian Influenza (“bird flu”) – Fact Sheet*, Feb. 2006, http://www.who.int/mediacentre/factsheets/avian_influenza/en/index.html (reporting that direct contact was the cause of eighteen human cases that occurred concurrently with the outbreak of a virtually identical virus in Hong Kong poultry farms and markets).

16. See *Key Facts*, *supra* note 14, at 2 (observing that human-to-human transmission has never “continue[d] beyond one person”). *But see* Centers for Disease Control and Prevention, *Avian Influenza: Current Situation* (Dep’t of Health & Human Serv. June 15, 2007), <http://www.cdc.gov/flu/avian/outbreaks/pdf/current.pdf> at 2 [hereinafter *Current Situation*] (suspecting human-to-human-to-human transmission within an Indonesian family in 2006).

17. See *Current Situation*, *supra* note 16, at 1 (noting that humans possess limited natural immunity to avian influenza); see also Lawrence O. Gostin & Benjamin E. Berkman, *Pandemic Influenza: Ethics, Law, and the Public’s Health*, 59 ADMIN. L. REV. 121, 124-25 (2007) (predicting 89,000 to 1.9 million deaths in

Viruses, such as avian influenza, have hereditary properties.¹⁸ Influenza viruses reproduce after attaching to living cells and combining their own RNA with protein from the cell.¹⁹ This RNA holds hereditary information that it transmits to the new viruses,²⁰ which then mirror the genetic properties of the initial virus absent mutation.²¹ It is exactly this mutation, however, that could cause avian influenza to become easily transmissible among humans, creating a real risk of pandemic.²²

A. INDONESIA'S HISTORY OF AVIAN INFLUENZA AND COOPERATION WITH THE WORLD HEALTH ORGANIZATION

Indonesia is the epicenter of the global avian influenza problem. Following the first instance of human infection reported in 2005, new cases have emerged at a worrisome pace.²³ Furthermore, the virus's human mortality rate is trending upward, increasing from

the United States and 2 million to 369 million deaths globally could occur depending on the severity of the pandemic).

18. See Australian Academy of Science, *Bird-Flu Glossary*, NOVA SCIENCE IN THE NEWS, <http://www.science.org.au/nova/090/090glo.htm> (last visited Mar. 25, 2009) (describing a genetic mutation as an alteration in the hereditary units of the DNA or RNA of viruses).

19. See Science Blog, *New Understanding Of How Influenza Virus Is Formed*, 1997, <http://www.scienceblog.com/community/older/1997/A/199700923.html> (describing the process as a virus "replicat[ing] itself").

20. See Pamela Peters, BIOTECHNOLOGY: A GUIDE TO GENETIC ENGINEERING (1993), excerpt available at http://www.accessexcellence.org/RC/AB/BC/Into_the_Looking_Glass.php (explaining that hereditary material is transmitted when the cells burst, releasing new virus particles, which infect more cells).

21. See Jane Lloyd, *The Bird Flu: Are We Ready for a Pandemic?*, U.N. CHRON. ONLINE EDITION, <http://www.un.org/Pubs/chronicle/2005/issue4/0405p64.html> (last visited Mar. 25, 2009) (noting that the avian influenza mutations that can render the disease transmissible to humans may occur during the normal course of virus reproduction or by re-assortment where avian influenza and another type of influenza are simultaneously present in a single cell and swap genetic information).

22. See Anita Manning, *Bird Virus Could Mutate into Pandemic Flu, Scientists Warn*, USA TODAY, Jan. 21, 2004, at 90, available at http://www.usatoday.com/news/health/2004-01-22-sars-and-flu-usat_x.htm (explaining mutation causing human-to-human transmission could occur when avian influenza encounters human influenza and they are able to exchange genes).

23. See Endang R. Sedyaningsih et al., *Towards Mutual Trust, Transparency and Equity in Virus Sharing Mechanism: The Avian Influenza Case of Indonesia*, 37 ANNALS ACAD. MED. SING. 482, 483 (2008) (reporting an average of five new cases per month from September 2005 to May 2007 and three new cases per month from June 2007 to December 2007).

sixty-three percent mortality in 2005 to eighty percent in 2006 and nearly eighty-six percent in 2007.²⁴ The prevalence of free-roaming chickens makes containing the virus within Indonesia particularly difficult.²⁵

Customarily, the international community has freely shared influenza virus samples by sending specimens to the WHO,²⁶ a practice that plays a key role in global health.²⁷ From 2005 to 2007, Indonesia fully complied with this tradition.²⁸ In January 2007, however, Indonesia began withholding avian influenza samples from the WHO sharing program.²⁹ Subsequently, Indonesia has submitted samples only sporadically.³⁰

The Minister of Health, Siti Fadilah Supari's justification for Indonesia's non-participation was twofold. First, third parties were using samples without Indonesia's consent, in violation of the WHO Guidance for the Timely Sharing of Influenza Viruses ("Guidance").³¹ The Guidance requires prior informed consent from

24. *Id.* at 484.

25. See, e.g., Seth Mydans, *Indonesian Chickens, and People, Hard Hit by Bird Flu*, N.Y. TIMES, Feb. 1, 2008, at A3, available at <http://www.nytimes.com/2008/02/01/world/asia/01flu.html> (explaining that eighty percent of Indonesia's 1.4 billion chickens run loose in villages and cities).

26. See, e.g., *WHO Adopts Resolution on Flu Virus Sharing*, CENTER FOR INFECTIOUS DISEASE RES. & POL'Y, May 23, 2007, <http://www.cidrap.umn.edu/cidrap/content/influenza/panflu/news/may2307who.html> [hereinafter *WHO Adopts*] (calling the free international exchange of viruses a "long tradition").

27. See David P. Fidler, *Influenza Virus Samples, International Law, and Global Health Diplomacy*, 14 EMERGING INFECTIOUS DISEASES 88, 88 (2008), available at <http://www.cdc.gov/eid/content/14/1/pdfs/88.pdf> (explaining that virus inaccessibility would hamper global surveillance, development of diagnostic tests, and intervention plans).

28. See Sedyaningsih et al., *supra* note 24, at 482-83 (claiming that Indonesia submitted all samples to WHO participating laboratories in the eighteen months following the first identified human case in July 2005). *But see* Richard Holbrooke & Laurie Garrett, Op-Ed, 'Sovereignty' That Risks Global Health, WASH. POST, Aug. 10, 2008, at B07 (alleging that Indonesia failed to submit samples beginning in 2005).

29. *Formally Announcing*, *supra* note 1.

30. See Sedyaningsih et al., *supra* note 24, at 486 (asserting that Indonesia submitted two samples in August of 2007, leaving thirty-three specimens unsent since deciding to withhold samples).

31. WHO, *Guidance for the Timely Sharing of Influenza Viruses/Specimens with Potential to Cause Human Influenza Pandemics*, at 1 (Mar. 2005), available at <http://www.sdnpsd.org/sdi/issues/health/birdflue/other/timelysharing.pdf>.

the donating party before use.³² Second, the virus sharing system, according to Supari, was inherently inequitable to the detriment of developing nations. Rather, the Minister of Health claimed that drug companies were selling patented vaccines created from the donated samples at prices that Indonesians could not afford.³³ Accordingly, Indonesia asserted a claim of ownership over domestic viruses, citing the CBD as precedent.³⁴

B. THE CONVENTION ON BIOLOGICAL DIVERSITY

Following its entry into force in December of 1993, scholars considered the CBD a novel agreement for its integration of environmental and developmental objectives.³⁵ The CBD articulates three objectives: (1) biodiversity conservation, (2) sustainable use, and (3) just benefit-sharing.³⁶ Article 3, stating the CBD's principle, places a responsibility upon states not to act in a way that will cause extraterritorial, environmental harm.³⁷ Articles 3 and 15 of the CBD, however, also place considerable emphasis on state sovereignty.³⁸ States are allocated full control over local biodiversity.³⁹ Article 15 enshrines this convergence of sovereignty and the CBD's objectives.⁴⁰ In a departure from tradition,⁴¹ Article 15 codifies a

32. *Id.*; see also Supari Address, *supra* note 3 (claiming that third parties used Indonesia's samples in presentations, publications, and applications for patents without permission).

33. See Supari Address, *supra* note 3.

34. See *id.* (arguing that viruses fall within the authority of the CBD because they are genetic resources); see also Makarim Wibisono, Op-Ed, *The Responsible Virus and Sharing Benefits*, JAKARTA POST, Aug. 27, 2008, available at <http://www.thejakartapost.com/news/2008/08/27/the-responsible-virus-and-sharing-benefits.html> (stating that viruses are "unequivocally, genetic resources subject to national sovereignty").

35. See Catherine Tinker, *A "New Breed" of Treaty: The United Nations Convention on Biological Diversity*, 13 PACE ENVTL. L. REV. 191, 191-93 (1995) (recognizing the CBD as one of a "new breed" of treaties that balance interests of developing and developed countries).

36. CBD, *supra* note 7, art. 1.

37. *Id.* art. 3.

38. See *id.* arts. 3, 15 (recognizing the sovereign right of States to exploit and control access to their own resources).

39. See Alejandro Grajal, *Biodiversity and the Nation State: Regulating Access to Genetic Resources Limits Biodiversity Research in Developing Countries*, 13 CONSERVATION BIOLOGY 6, 6 (Feb. 1999) (describing the right as "one of the most radical philosophical features" of the CBD).

40. See CBD, *supra* note 7, art. 15 (recognizing "the sovereign rights of States

State's sovereign authority to regulate access to its genetic resources.⁴² The article further requires, as a basis for access, mutually agreed upon terms and prior informed consent.⁴³ Finally, the article reiterates the CBD's goal of promoting equitable sharing of genetic resources.⁴⁴

Indonesia believes that viruses, including avian influenza, are genetic resources within the meaning of the CBD and Article 15.⁴⁵ Therefore, Indonesia also believes that, under Articles 3 and 15, it is justified in withholding virus samples, and that other Countries have violated its rights to mutually agreed terms of access, prior informed consent, and equitable benefit-sharing.⁴⁶ "Viral sovereignty," as commentators have coined the concept,⁴⁷ has not remained exclusively Indonesian—other states have used or considered adopting the idea.⁴⁸

over their natural resources").

41. See, e.g., Aphrodite Smagadi, *Analysis of the Objectives of the Convention on Biological Diversity: Their Interrelation and Implementation Guidance for Access and Benefit Sharing*, 31 COLUM. J. ENVTL. L. 243, 244-46 (2006) (averring that international law had traditionally regarded genetic resources as a part of the global commons).

42. *Id.* art. 15(1).

43. CBD, *supra* note 7, art. 15(4)-(5).

44. See *id.* art. 15(7) (requiring States to take "legislative, administrative, or policy measures" to ensure a fair distribution of the benefits derived from genetic resources).

45. See Supari Address, *supra* note 3 (alleging an international failure to respect Indonesia's sovereign right to control access to avian influenza samples).

46. See *supra* Part I.A (explaining that Dr. Supari asserted that the WHO Guidelines for the Sharing of Influenza Viruses had been violated for the same reasons).

47. See, e.g., Holbrooke & Garrett, *supra* note 29 (explaining that Indonesia's Minister of Health, Dr. Supari, first used the term to mean that viruses are the sovereign property of individual nations).

48. See *id.* (reporting that India endorsed viral sovereignty in a clash with Bangladesh and that the 112-nation organization, Non-Aligned Movement, weighed formal adoption of the idea in November 2008).

C. THE INTERNATIONAL COVENANT ON ECONOMIC, SOCIAL AND CULTURAL RIGHTS

Indonesia acceded to the ICESCR in February of 2006.⁴⁹ Among the most significant provisions of the ICESCR is the human right to health.⁵⁰ Article 12 of the ICESCR affirms a right to the “highest attainable standard” of health and requires parties to take affirmative steps toward realization of that aim.⁵¹ Explicit among those compulsory affirmative steps is the management of infectious diseases, codified in Article 12(2)(c).⁵²

The right to health expounded in the ICESCR is not a right to be healthy.⁵³ In fact, the right to health is analogous to a reasonableness standard rather than an absolute guarantee. This is necessary to account for states’ disparate wealth, capacities, and afflictions.⁵⁴ What the ICESCR does require, is a national effort to protect the

49. Office of the United Nations High Commissioner for Human Rights [OHCHR], *ICESCR Ratifications and Reservations*, <http://www2.ohchr.org/english/bodies/ratification/3.htm> (last visited Mar. 25, 2009).

50. See Hans V. Hogerzeil et al., *Is Access to Essential Medicines as Part of the Fulfilment [sic] of the Right to Health Enforceable Through the Courts?*, 368 LANCET 305, 305 (2006) (stating that the ICESCR is a foundational source of legal obligations concerning the right to health).

51. ICESCR, *supra* note 8, art. 12 (listing provisions to decrease infant mortality and, the health of children; to enhance environmental and industrial cleanliness; to prevent, treat, and control infectious diseases; and to make medical services available to all).

52. *Id.* art. 12(2)(c).

53. See, e.g., Judith Asher, *About the Right to Health*, in THE RIGHT TO HEALTH: A RESOURCE MANUAL FOR NGOS (Commonwealth Medical Trust 2004), available at <http://www.amnestyusa.org/poverty-and-human-rights/health-and-human-rights/about-the-right-to-health/page.do?id=1104611> (explaining that States are not expected to protect citizens from, or treat citizens for any, and every malady but that States are responsible for providing facilities and conditions that are necessary for good health).

54. See Alicia Ely Yamin, *The Right to Health Under International Law and Its Relevance to the United States*, 95 AM. J. OF PUB. HEALTH 1156, 1156 (July 2005) (noting particularly dramatic differences in health standards between the global North and South); see also Benjamin Mason Meier & Larisa M. Mori, *The Highest Attainable Standard: Advancing a Collective Human Right to Public Health*, 37 COLUM. HUM. RTS. L. REV. 101, 115-16 (2005) (observing that the right to health is an exception to the traditional rigidity of human rights because states may differ in their approaches and resources).

health of a country's citizens to the greatest extent that resource constraints allow.⁵⁵

The ICESCR's commitment to the modes of health's attainment is not consigned solely to the local level.⁵⁶ In addition to satisfying the right to health, individual states must guard their right in the same from third party obstruction.⁵⁷ Furthermore, Article 2 compels states to take not only individual steps toward the realization of ICESCR objectives, but also international cooperative and assistive measures.⁵⁸

In 2000, the U.N. Committee on Economic, Social and Cultural Rights issued General Comment 14,⁵⁹ an explanation of ICESCR Article 12's content.⁶⁰ Regarding the text of Article 12's section 2(c), General Comment 14 describes disease "control" as individual and cooperative work that provides access to appropriate technology and employs disaggregated epidemiological information.⁶¹ More generally, General Comment 14 commands immediate and ongoing "deliberate, concrete and targeted" steps toward the right to health's

55. See ICESCR, *supra* note 8, art. 2(1) (mandating individual and internationally cooperative efforts "to the maximum of [states'] available resources").

56. See U.N. Econ. & Soc. Council [ECOSOC], Comm. on Econ., Soc. and Cultural Rights, *General Comment No. 14: The Right to the Highest Attainable Standard of Health*, ¶¶ 38-42, U.N. Doc. E/C.12/2000/4 (Aug. 11, 2000) [hereinafter *General Comment 14*] (explaining Article 12's international obligations, which include mandatory respect for other states' right to health, a collective responsibility to deal with communicable diseases, and a ban on medicine and medical equipment embargoes for political leverage).

57. See Philippe Cullet, *Patents and Medicine: the Relationship Between TRIPS and the Human Right to Health*, 79 INT'L AFF. 139, 148 (2003), available at <http://www.ielrc.org/content/a0301.pdf> (suggesting that states adopt legislative, administrative and other measures to prevent third parties from interfering with the right to health).

58. ICESCR, *supra* note 8, art. 2(1) (noting the particular importance of economic and technical international cooperation).

59. *General Comment 14*, *supra* note 56 (recognizing health as a fundamental human right for all to enjoy to the greatest possible degree).

60. *Id.* ¶ 6; see also MATTHEW C.R. CRAVEN, THE INTERNATIONAL COVENANT ON ECONOMIC, SOCIAL, AND CULTURAL RIGHTS: A PERSPECTIVE ON ITS DEVELOPMENT 90-91 (Ian Brownlie ed., 1995) (explaining that the Committee on Economic, Social and Cultural Rights issues General Comments, conceptually interpreting the ICESCR in order to foster common understanding of the ICESCR's standards).

61. *General Comment 14*, *supra* note 56, ¶ 16.

attainment.⁶² Taking backward steps is presumptively impermissible.⁶³

General Comment 14 further outlines states' specific international obligations.⁶⁴ Aside from cooperating with other states,⁶⁵ parties to the ICESCR must respect other states' rights to health.⁶⁶ Additionally, General Comment 14 recognizes that communicable diseases present a special worldwide concern, demanding an international collective effort to manage it.⁶⁷

II. ANALYSIS

Differing reactions have met Indonesia's decision to withhold avian influenza samples.⁶⁸ Indonesian officials, however, believe they are acting well within the law.⁶⁹ Although the CBD permits Indonesia's declaration of viruses as sovereign property, by withholding avian influenza samples from the WHO, Indonesia violates the ICESCR's right to health and may violate the CBD's prohibition on harming extraterritorial biological diversity.

62. *Id.* ¶ 30.

63. *See id.* ¶ 32 (explaining that "deliberately retrogressive measures" will shift the burden of proof to the state to show that all alternatives were properly considered and the action was justified viewing all of the ICESCR's rights in light of the state's resource limitations); *see also* Yamin, *supra* note 54, at 19 (illustrating that scaling back a State-run antiretroviral drug program due to financial constraints is a retrogressive measure).

64. *General Comment 14, supra* note 57.

65. *See ICESCR, supra* note 8, art. 2(1); *General Comment 14, supra* note 56, ¶ 38.

66. *See General Comment 14, supra* note 56, ¶ 39 (explaining that states should prevent third parties from interfering with other states' right to health via available political or legal measures).

67. *Id.* ¶ 40.

68. *Compare* Holbrooke & Garrett, *supra* note 29 (labeling Indonesia's actions as "morally reprehensible"), *with* Belford, *supra* note 5 (reporting Health Minister Supari has been labeled a hero by many Indonesians for standing up to the Western world).

69. *See* Supari Address, *supra* note 3 (arguing that viruses are regulated by the CBD to which Indonesia is a party); Wibisono, *supra* note 34 (deeming "viral sovereignty" to pre-date the present controversy and that viruses are "unequivocally" genetic resources subject to national sovereignty); Sedyaningsih et al., *supra* note 23, at 485 (asserting that the CBD protects a state's right to allow or disallow access to virus specimens).

A. VIRUSES ARE “GENETIC RESOURCES” WITHIN THE MEANING OF
ARTICLE 15 OF THE CONVENTION ON BIOLOGICAL DIVERSITY
BECAUSE THEY HAVE ACTUAL MONETARY VALUE AND POTENTIAL
SOCIAL VALUE

Article 15 of the CBD codifies a sovereign right to exercise dominion over genetic resources.⁷⁰ The CBD defines a genetic resource as “genetic material of actual or potential value.”⁷¹ Genetic material is further sub-defined as “any material of plant, animal, microbial or other origin containing functional units of heredity.”⁷² Furthermore, the CBD’s supplement, the Cartagena Protocol on Biosafety, explicitly acknowledges that viruses are “living organism[s],” which transfer or replicate genetic matter.⁷³

To qualify as a genetic resource under the CBD, however, a virus must also be actually or potentially valuable.⁷⁴ Avian influenza, like all viruses, has functional hereditary properties. Therefore, it and other virus samples have social value in their critical importance to the development of new and effective vaccines.⁷⁵ Moreover, Indonesia’s contract negotiation to sell avian influenza samples to American company Baxter Healthcare demonstrates that the virus has actual monetary value.⁷⁶

Some have argued, however, that one must measure value, not in unqualified terms, but in relation to the CBD’s objectives of

70. CBD, *supra* note 7, art. 15(1).

71. *Id.* art. 2.

72. *Id.*

73. Cartagena Protocol on Biosafety to the Convention on Biological Diversity, art. 3(h), Jan. 29, 2000, 39 I.L.M. 1027, available at <http://www.cbd.int/doc/legal/cartagena-protocol-en.pdf> (defining a “living organism” as “any biological entity capable of transferring or replicating genetic material, including sterile organisms, viruses and viroids”).

74. CBD, *supra* note 7, art. 2.

75. See Nick Huber, *Brussels Gives Green Light to Glaxo’s Bird Flu Vaccine*, GUARDIAN, May 19, 2008, <http://www.guardian.co.uk/business/2008/may/19/glaxosmithklinebusiness.pharmaceuticals> (revealing that GlaxoSmith-Kline created a vaccine using Indonesian and Vietnamese samples, donated 50 million doses to the WHO, and sold other doses to multiple national governments).

76. Cf. Donald G. McNeil Jr., *Indonesia May Sell, Not Give, Bird Flu Virus to Scientists*, N.Y. TIMES, Feb. 7, 2007, at A6, available at <http://www.nytimes.com/2007/02/07/world/asia/07birdflu.html> [hereinafter *Indonesia May Sell Bird Flu*].

conservation and sustainable use.⁷⁷ The conclusion reached from this line of reasoning is that viruses have no value in conserving or sustaining biodiversity unless they are shared.⁷⁸ Although this argument is true for the actual value of viruses, it ignores, and in fact actually implicitly concedes, potential value.⁷⁹ Additionally, subjugating the CBD's sovereignty principles to the status of a "regulatory instrument" for attaining the conservation and sustainable use objectives⁸⁰ ignores the CBD's equitable benefit-sharing objective.⁸¹ Part of the CBD's novelty lies in the interaction of sovereignty and benefit-sharing, balancing the distinct self-interests of access to genetic material and access to the benefits of technology and money as a means of promoting equitable sharing.⁸² Where each party wants what the other owns, the playing field is leveled and benefits may flow both ways.⁸³ Further, where technology-rich countries receive access to virus samples and developing countries receive access to affordable vaccines, it will promote the conservation of biodiversity.⁸⁴

B. INDONESIA'S DECISION TO WITHHOLD AVIAN INFLUENZA
SAMPLES DIMINISHES GLOBAL CAPACITY TO CONTROL THE VIRUS
AND, THEREFORE, CAN HARM THE BIOLOGICAL DIVERSITY OF
OTHER NATIONS IN VIOLATION OF ARTICLE 3 OF THE CONVENTION
ON BIOLOGICAL DIVERSITY

Article 3 of the CBD requires state parties to take care that actions within their borders do not cause extraterritorial harm.⁸⁵ However, an attempt to keep all local biodiversity, including viruses, within state

77. See Fidler, *supra* note 27, at 91 (arguing that "value" stems from the ability to protect, conserve, and sustainably use resources).

78. *Id.*

79. See *id.* (maintaining that viruses are valuable if they are shared for vaccine development which helps mitigate biodiversity and infection dangers).

80. See *id.* (contending the CBD's sovereignty principle is an ineffectual way to facilitate the goal of international virus-sharing).

81. See CBD, *supra* note 7, art. 1 (asserting that the benefit-sharing objective is on equal footing with the conservation and sustainable use objectives).

82. See Tinker, *supra* note 35, at 194-95 (distinguishing the CBD from traditional treaties where developing nations have had little bargaining power).

83. See, *e.g.*, *id.* at 194 (describing the exchange between developed and developing countries as a "trade-off" between access to genetic resources and access to the technology that can harness those resources).

84. *Cf.* Fidler, *supra* note 28, at 90-91.

85. CBD, *supra* note 7, art. 3.

boundaries is an exercise in futility.⁸⁶ For this reason, some have called granting states a sovereign right to a virus “ludicrous.”⁸⁷ Former Indonesian Ambassador to the United Nations, Makarim Wibisono, concedes that no one can block viruses at the border, rather nearly all genetic resources traverse state boundaries.⁸⁸

This boundless movement of viruses, however, is precisely why sample sharing is vital to preserving biodiversity and public health.⁸⁹ For example, an Asian strain of the virus, caused the avian influenza spate that killed 2,600 birds in Great Britain in 2007.⁹⁰ In 2005 and 2006, an avian influenza strain directly connected to strains in Russia, China, and Mongolia appeared in Turkey.⁹¹ Indonesia’s decision to withhold virus samples from the WHO frustrates global surveillance of avian influenza’s spread and the development of effective diagnostic tests and vaccines to recognize and combat the virus.⁹² The diminished ability to track, diagnose and treat avian influenza means a diminished ability to preserve biodiversity.

86. See, e.g., Tinker, *supra* note 36, at 203 (conceding that microbes cannot be confined within national boundaries and underscoring that seed and plant smuggling is hard to detect).

87. Holbrooke & Garrett, *supra* note 29 (noting that migratory birds can take viruses across international borders).

88. Wibisono, *supra* note 35 (listing birds, plants, insects, microbes, and crops among those resources that cross borders).

89. Cf. Donald G. McNeil Jr., *Scientists Warn that Bird-Flu Virus Remains a Threat*, N.Y. TIMES, Feb. 15, 2007, available at <http://www.nytimes.com/2007/02/15/health/15avian.html> (recounting avian influenza’s spread from Asia to Europe to Africa and reporting that both Britain and Nigeria have culled hundreds of thousands of birds after outbreaks); Press Release, World Health Organization, *Indonesia to Resume Sharing H5N1 Avian Influenza Virus Samples Following a WHO Meeting in Jakarta* (Mar. 27, 2007), <http://www.who.int/mediacentre/news/releases/2007/pr09/en/index.html> [hereinafter *Indonesia to Resume Sharing*] (acknowledging the need to find a balance between sharing viruses for purposes of vaccine development with ensuring that developing countries benefit from this development).

90. Jon Ungood-Thomas & Steven Swinford, *Britain Hit by Killer Bird Flu*, TIMES ONLINE, Feb. 4, 2007, <http://www.timesonline.co.uk/tol/news/uk/article1323823.ece> (hypothesizing that wild birds are the most likely source of introduction of the virus to one of Britain’s largest poultry producers).

91. *Turkey Bird Flu is Deadly Strain*, BBC NEWS, Oct. 13, 2005, <http://news.bbc.co.uk/2/hi/europe/4337918.stm>.

92. See Fidler, *supra* note 28, at 88 (highlighting Indonesia’s importance in the effort to check avian influenza because of its volume of infections); see also Huber, *supra* note 82 (reporting most avian influenza vaccines need to be modified after four to six months, which is typically when a new strain of the virus emerges).

Instead, states will cull domesticated birds suspected of infection by the thousands,⁹³ rare wild birds will continue to die,⁹⁴ and people could destroy the habitats of many other species in an effort to combat avian influenza's spread.⁹⁵

It is uncertain whether Indonesia's decision to withhold avian influenza samples would cause other countries sufficient harm to invoke Article 3 of the CBD.⁹⁶ Because Article 3 places responsibility on States only for "activities" inside its borders,⁹⁷ an alleged violation would require a showing that Indonesia's failure to provide specimens was the cause of damage in another country, not simply that a virus originated in Indonesia.⁹⁸ For example, Indonesia's policy decision not to report local avian influenza outbreaks⁹⁹ might induce a country, believing there had been no

93. See, e.g., *Pakistan Detects 'Mild' Bird Flu*, BBC NEWS, Feb. 27, 2006, http://news.bbc.co.uk/2/hi/south_asia/4755126.stm (reporting 25,000 domestic birds were culled in Pakistan in 2006 as a precaution after the appearance of the mild pathogenic form of avian influenza in neighboring India).

94. See Scott Weidensaul, Op-Ed, *Cull of the Wild*, N.Y. TIMES, Nov. 30, 2005, at A3, available at <http://www.nytimes.com/2005/11/30/opinion/30weidensaul.html> (informing that avian influenza in China killed as many as ten percent of the world's bar-headed geese); see also *Rare Birds to be Culled Over Bird Flu*, CHINA POST, Feb. 18, 2004, available at <http://www.chinapost.com.tw/taiwan/2004/02/18/46047/Rare-birds.htm> (reporting that two protected species of pheasant were to be slaughtered in China).

95. See BirdLife International, *BirdLife Statement on Avian Influenza*, http://www.birdlife.org/action/science/species/avian_flu/ (last visited Mar. 27, 2009) (alleging that some governments' plans to drain wetlands to discourage waterfowl's presence could be a more substantial threat to nature than avian influenza).

96. Cf. *Indonesia May Sell Bird Flu*, *supra* note 83 (quoting epidemiologist Dr. Arnold S. Monto as saying that withholding avian influenza samples will cause Indonesia greater harm than any other country, but that Indonesia's neighbors bear a substantial risk as well).

97. CBD, *supra* note 7, art. 3 ("States have . . . the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States . . .").

98. See Tinker, *supra* note 36, at 203-04 (highlighting that signatories to the CBD have the freedom to design their own strategies, but have obligated themselves to be responsible for negative extraterritorial consequences of those strategies).

99. See *WHO Upset Over Indonesia's Shift in Avian Flu Reporting*, CBC NEWS, June 6, 2008, <http://www.cbc.ca/health/story/2008/06/06/who-avianflu.html> (citing Indonesia's decision to report avian flu deaths only twice per year instead of as they occur).

recent occurrences of avian influenza there, to purchase Indonesian poultry that it would not have purchased with full knowledge of outbreaks.¹⁰⁰ Were that purchased poultry actually infected with avian influenza that subsequently spread to domestic wildlife, the importing country would have a valid Article 3 complaint.¹⁰¹ In that case, Indonesia's policy decision, rather than just the indigenous virus, would have negatively affected another country's environment in violation of the CBD Article 3.¹⁰²

C. INDONESIA'S DECISION TO WITHHOLD AVIAN INFLUENZA
SAMPLES VIOLATES ARTICLE 12 OF THE INTERNATIONAL
COVENANT ON ECONOMIC, SOCIAL AND CULTURAL RIGHTS

Article 12 of the ICESCR codifies a human right to health and compels states to take affirmative steps toward its realization, including the management of infectious diseases.¹⁰³ In addition to obligations toward its own citizens,¹⁰⁴ a party to the ICESCR also has international obligations regarding the right to health.¹⁰⁵ Indonesia's policy of withholding avian influenza samples from the WHO, although not an embargo of medicine or medical equipment, is a deliberately retrogressive measure and an obstacle to other states' enjoyment of the right to health.

100. Cf. U.S. Dep't of State, U.S. Embassy Jakarta, Indonesia, Economic Section, *More Avian Flu Outbreaks in Indonesia*, http://www.usembassyjakarta.org/econ/avian_flu.html (last visited Mar. 28, 2009) (reporting that Singapore and Malaysia discontinued Indonesian poultry imports in 2003 after rumors of avian influenza outbreaks).

101. See Tinker, *supra* note 36, at 205 (explaining that a state's policy choices are not directly challengeable until they result in some harmful "transboundary effect").

102. See *id.* at 203-04 (explaining that state actions causing harm beyond that state's jurisdiction violate Article 3).

103. ICESCR, *supra* note 8, art. 12.

104. See, e.g., *General Comment 14*, *supra* note 57, ¶¶ 34-37 (enumerating broadly the obligations to respect, protect, and fulfill citizens' right to health).

105. See *id.* ¶¶ 38-41 (listing an obligation to respect other states' right to health, to work cooperatively to control infectious diseases, and to refrain from using access to medicines as a political tool).

1. Indonesia's actions are not an embargo on medicine or medical equipment

General Comment 14 directs states to avoid imposing embargoes and restrictions on medicine and medical equipment.¹⁰⁶ The Committee on Economic, Social and Cultural Rights has recognized the close relationship between economic sanctions and the rights enumerated in the ICESCR.¹⁰⁷ Although Indonesia is certainly restricting access to its supply of avian influenza samples for political and economic purposes,¹⁰⁸ this does not implicate a violation of the ICESCR's right to health because there is no directly restricted access to medicine or medical equipment.¹⁰⁹ The prohibition on embargoes impairing other states' right to health, which the Committee on Economic, Social and Cultural Rights drew comparatively narrowly, contemplates only restrictions of medicine and medical equipment.¹¹⁰

106. *See id.* ¶ 41 (forbidding such restrictions for political and economic leverage).

107. *See generally* ECOSOC, Comm. on Econ., Soc. and Cultural Rights, *General Comment No. 8: The Relationship Between Economic Sanctions and Respect for Economic, Social and Cultural Rights*, U.N. Doc. E/C.12/1997/8 (Dec. 12, 1997) (distinguishing permissible economic and political pressure on a government from impermissible collateral human rights consequences on vulnerable segments of society).

108. *See* Wibisono, *supra* note 35 (explaining that Indonesia seeks to reform the virus-sharing system and secure vaccines at reasonable prices); *see also* Belford, *supra* note 5 (characterizing Indonesia's view of the current virus-sharing system as "unfair . . . and not equitable").

109. *See, e.g.*, Holbrooke & Garrett, *supra* note 29 (accusing Indonesia only of withholding avian influenza samples and information).

110. *Compare General Comment 14, supra* note 57, ¶ 41 (prohibiting only certain restrictions on supplies of medicine and medical equipment), *with* ECOSOC, Comm. on Econ., Soc. and Cultural Rights, *General Comment No. 15: The Right to Water*, ¶ 32, U.N. Doc. E/C.12/2002/11 (Jan. 20, 2003) (prohibiting restrictions on supplies of water and "all goods and services essential for securing the right to water"), *and* ECOSOC, Comm. on Econ., Soc. and Cultural Rights, *General Comment No. 12: The Right to Adequate Food*, ¶ 37, U.N. Doc. E/C.12/1999/5 (May 12, 1999) (prohibiting restrictions on supplies of food and "similar measures which endanger conditions for food production and access to food").

2. Indonesia's actions are deliberately retrogressive measures

Actions deliberately retrogressive to the realization of the right to health are presumptively incompatible with Article 12.¹¹¹ A state may overcome the presumption, however, by showing that they implemented the action only after a thorough contemplation of alternatives and can defend the measure as the greatest use of that state's available resources with respect to the totality of rights the ICESCR enumerates.¹¹² The Committee on Economic, Social and Cultural Rights has tolerated retrogressive steps on these grounds in the context of state emergencies such as economic crisis, natural disaster, and armed conflict.¹¹³

Although the Committee on Economic, Social and Cultural Rights has not proffered a concrete definition of "deliberate retrogressive measure," one suggested interpretation is, "any measure that implies a step back in the level of protection accorded to the rights contained in the [ICESCR] which is the consequence of an intentional decision by the State."¹¹⁴ Indonesia made a deliberate policy decision to withhold avian influenza samples in protest.¹¹⁵ Indonesian citizens will suffer reduced access to avian influenza vaccines, both in quantity and quality, as a collateral effect of their government's decision.¹¹⁶ Under the ICESCR, the collateral retrogressive effects of

111. *General Comment 14*, *supra* note 57, ¶ 32.

112. *Id.*

113. *See, e.g.,* ECOSOC, Comm. on Econ., Soc. and Cultural Rights, *Consideration of Reports Submitted by States Parties under Articles 16 and 17 of the Covenant: Concluding Observations of the Committee on Economic, Social and Cultural Rights: Croatia*, ¶¶ 7, 18, U.N. Doc. E/C.12/1/Add.73 (Dec. 5, 2001) (expressing concern over worsening standards of living, but acknowledging the effects of armed conflict had negatively affected Croatia's ability to implement the ICESCR).

114. MAGDALENA SEPÚLVEDA, *THE NATURE OF THE OBLIGATIONS UNDER THE INTERNATIONAL COVENANT ON ECONOMIC, SOCIAL AND CULTURAL RIGHTS* 323-26 (2003) (conceding the Committee on Economic, Social and Cultural Rights traditionally has not rigidly scrutinized these measures).

115. *See* Supari Address, *supra* note 3 (indicating Indonesia sought to draw attention to the inequities in the virus-sharing system); *see also* Sedyaningsih et al., *supra* note 24, at 485-86 (explaining that a "breakdown of trust" among the virus-sharing community prompted Indonesia's decision to withhold specimens).

116. *See* Claudia D. Surjadjaja, *Vaccines and the Justice of Reciprocity*, JAKARTA POST, Mar. 12, 2007, available at http://www.indonesia-ottawa.org/information/details.php?type=news_copy&id=3795 (recognizing Indonesia is

an intentional decision are no more acceptable than the direct retrogressive effects.¹¹⁷ As such, Indonesia's policy is a deliberate retrogressive measure under General Comment 14, and is presumptively violative of ICESCR Article 12 until Indonesia rebuts the presumption.¹¹⁸

That Indonesia aims to highlight inequity in the international virus-sharing mechanism and is working toward the ability to produce its own vaccines¹¹⁹ does not automatically excuse its citizens' current diminished protection.¹²⁰ General Comment 14 pardons retrogressive measures only after a state shows it used limited resources to their utmost and thoroughly surveyed alternative options.¹²¹ However, Indonesia, has not exhausted all alternatives.¹²² Similarly, resource constraints pose no obstacle to Indonesia's virus-sharing compliance.¹²³ For these reasons, Indonesia is unable to refute adequately General Comment 14's presumption of

unable to quickly and effectively manufacture vaccines on its own); *see also Indonesia May Sell Bird Flu*, *supra* note 83 (arguing that rebuffing the world's best laboratories will primarily hurt Indonesia itself).

117. *See* SEPÚLVEDA, *supra* note 126, at 323-24 (emphasizing, through examples of deliberately retrogressive measures, that only the action taken need be intentional, not the effects).

118. *See General Comment 14*, *supra* note 57, ¶ 32 (permitting retrogressive measures only after showing "the most careful consideration" of all options and appropriate allocation of limited resources).

119. *See* Joint Statement from the Ministry of Health of Indonesia & WHO, Sharing of Avian Influenza Viruses and Pandemic Vaccine Production (Feb. 16, 2007), available at <http://www.who.int/mediacentre/news/statements/2007/s02/en/index.html> [hereinafter Joint Statement] (suggesting local vaccine production as the long-term solution to access problems).

120. *See General Comment 14*, *supra* note 57, ¶ 32 (placing the burden of justifying the retrogressive health effects on the offending state).

121. *See* SEPÚLVEDA, *supra* note 126, at 327-32 (concluding that a state defending retrogressive measures as a result of resource limitations must show exhaustion of resources at hand, impliedly including solicitation of international assistance).

122. *Cf. Government Told to Sue WHO Over Virus Samples*, JAKARTA POST, Feb. 10, 2007, available at <http://old.thejakartapost.com/yesterdaydetail.asp?fileid=20070210.H02>

123. *See* WHO, Regional Office for South-East Asia, *Guidelines on Laboratory Diagnosis of Avian Influenza*, at 16-17 (2007), available at http://www.searo.who.int/LinkFiles/CDS_CDS-Guidelines-Laboratory.pdf (explaining that the WHO will cover shipping costs National Influenza Centers incur upon sending influenza samples to WHO collaborating centers).

impermissibility, and it is, therefore, in violation of ICESCR Article 12.¹²⁴

3. *Indonesia's actions interfere with other countries' enjoyment of the right to health*

General Comment 14 obligates states to respect other states' enjoyment of the right to health.¹²⁵ In the context of the ICESCR, to "respect" means to avoid obstruction of the enjoyment of any of the enumerated rights.¹²⁶ For the purposes of Article 12, a violation of the obligation to respect occurs when an action is likely to cause injury or unnecessary illness and death.¹²⁷

Indonesia's decision to withhold avian influenza samples from the WHO negatively affects the global supply of vaccines and threatens global health.¹²⁸ Without access to Indonesian avian influenza specimens, manufacturers may be producing vaccines that are less effective against a newly emerged strain, leaving countries worldwide with a supply of outdated vaccines.¹²⁹ Similarly, denial of Indonesian specimens hampers international avian influenza surveillance,¹³⁰ which is essential to controlling the risk of a pandemic.¹³¹ The Indonesian policy's deleterious effect on the global

124. Cf. *General Comment 14*, *supra* note 57, ¶ 32.

125. See *id.* ¶ 39 (including an obligation to block third parties from interfering with other countries' right to health where possible).

126. ECOSOC, Comm. on Econ., Soc. and Cultural Rights, *Maastricht Guidelines on Violations of Economic, Social and Cultural Rights*, ¶ 6, U.N. Doc. E/C.12/2000/13 (Oct. 2, 2000).

127. See *General Comment 14*, *supra* note 57, ¶ 50 (listing as an example the purposeful withholding of information necessary for effective health protection or treatment).

128. See Editorial, *Indonesia's Avian Flu Holdout*, N.Y. TIMES, Feb. 16, 2007, available at <http://www.nytimes.com/2007/02/16/opinion/16fri1.html> [hereinafter *Flu Holdout*].

129. See WHO: *Indonesia Won't Share Bird Flu Vaccine Research*, FOXNEWS.COM, Feb. 8, 2007, <http://www.foxnews.com/story/0,2933,250909,00.html> (explaining Indonesia's experience with avian influenza makes access to specimens all the more important for vaccine development).

130. See Bryan Walsh, *Indonesia's Bird Flu Showdown*, TIME, May 10, 2007, available at <http://www.time.com/time/health/article/0,8599,1619229,00.html> (explaining that the world only has a partial understanding of the avian flu situation in Indonesia since it stopped sharing virus samples).

131. See U.S. Dep't of Health & Human Serv., Global Activities, PandemicFlu.gov, <http://www.pandemicflu.gov/global/index.html> (last visited Jan. 16, 2009) (citing detection, isolation, and notification as critical to mitigating any

capacity to manage avian influenza is likely to result in unnecessary illness and death,¹³² violating its Article 12 obligation to respect other states' enjoyment of health.¹³³

Because of the inability to control transmissibility beyond national borders, General Comment 14 also imposes on states a collective duty to address the threat of infectious diseases.¹³⁴ Indonesia's actions, however, obstruct global efforts to tackle avian influenza's risk.¹³⁵ Indeed, because Indonesia is in a position to assist other countries in realizing the right to health by providing valuable information on a pandemic threat,¹³⁶ the ICESCR, U.N. Charter, and international law require it to do as much.¹³⁷ Furthermore, Indonesia's international non-cooperation is the result of unwillingness, not inability, to cooperate.¹³⁸ Indonesia's actions constitute a violation of the ICESCR's mandate to allocate the maximum of available resources toward realization of the right to health.¹³⁹

pandemic threat).

132. See Walsh, *supra* note 143 (explaining that the WHO's senior representative on pandemic influenza believes Indonesia's actions put the world at a higher risk of pandemic); see also Belford, *supra* note 5 (reporting that a past leader of Indonesia's doctor's association suspects the world will hold Indonesia responsible if unable to contain a future avian influenza outbreak).

133. *General Comment 14*, *supra* note 57, ¶ 39.

134. See *id.* ¶ 40 (averring developed nations have a further responsibility and self-interest in helping developing nations control infectious diseases); see also Supari Address, *supra* note 3 (acknowledging containment requires "a collective, holistic effort, reflecting a spirit of solidarity").

135. See Fidler, *supra* note 28, at 88 (stating that Indonesia's actions detrimentally affect avian influenza's global surveillance, diagnosis, and intervention strategies).

136. See Walsh, *supra* note 143 (explaining scientists need access to Indonesia's exceptionally lethal avian influenza to monitor virus mutations that could trigger pandemic); see also *WHO: Indonesia Won't Share Bird Flu Vaccine Research*, *supra* note 142 (stating that access to new strains is critical to fabricating vaccines to counter dominant strains most likely to cause pandemic).

137. See ECOSOC, Comm. on Econ., Soc. and Cultural Rights, *General Comment No. 3: The Nature of States Parties Obligations*, ¶14, U.N. Doc. E/1991/23, annex III at 86 (1991)(Dec. 14, 1990) (describing that all states, but particularly those in a place to assist, have an obligation to work cooperatively toward the realization of the ICESCR's rights).

138. See Sedyaningsih et al., *supra* note 24, at 486 (citing failed trust and inequitable benefit-sharing as the motivating factors leading to the decision to withhold samples).

139. ICESCR, *supra* note 8, art. 2(1); see *General Comment 14*, *supra* note 57, ¶9 (declaring the reluctance to commit available resources to the achievement of

III. RECOMMENDATIONS

Urgent action is needed to mitigate further hindrance to pandemic risk control.¹⁴⁰ Globalization has caused diseases to spread much more quickly than in the past.¹⁴¹ Previous influenza pandemics took only four months to circle the globe.¹⁴² As a consequence, the world must regard the control of infectious diseases as an international undertaking.¹⁴³

A. THE WHO SHOULD REQUEST AN ADVISORY OPINION FROM THE INTERNATIONAL COURT OF JUSTICE REGARDING THE LEGALITY OF WITHHOLDING VIRUS SAMPLES FROM INTERNATIONAL HEALTH FACILITIES

Lacking a definitive violation of the CBD, other countries are unable to invoke the treaty's dispute resolution mechanisms.¹⁴⁴ Under the U.N. Charter though, the WHO has the ability to request an advisory opinion of the ICJ.¹⁴⁵ Although an ICJ advisory opinion traditionally will not be binding, it will carry substantial authority and legitimacy.¹⁴⁶

An advisory opinion on the propriety of withholding avian influenza specimens could do much to settle the on-going dispute over the policy's legality.¹⁴⁷ In 1996, the WHO sought an advisory

the right to health a violation of Article 12 obligations).

140. See U.S. Dep't of Health & Human Serv., Global Monitoring, PandemicFlu.gov, <http://www.pandemicflu.gov/outbreaks/samplesharing.html> (last visited Nov. 7, 2008).

141. See Meier & Mori, *supra* note 55, at 106 (citing AIDS, SARS, mad cow disease, avian influenza, and drug-resistant tuberculosis as diseases that have been transmitted from developing countries to developed countries).

142. See Walsh, *supra* note 143 (noting the most recent influenza pandemics occurred in 1957 and 1968, before modern widespread jet travel).

143. See Yamin, *supra* note 55, at 1156 (suggesting that a solution to the problem will require cooperation by the North and South).

144. See CBD, *supra* note 7, art. 27 (requiring negotiation and mediation before arbitration or submission to the International Court of Justice).

145. See U.N. Charter art. 96, para. 2 (granting U.N. organs and specialized agencies the right to seek an advisory opinion from the Court).

146. See Int'l Court of Justice, *Advisory Jurisdiction*, <http://www.icj-cij.org/jurisdiction/index.php?p1=5&p2=2> (last visited Mar. 29, 2009) (recognizing non-binding advisory opinions from the ICJ often play important peace-keeping and preventative roles).

147. Cf. Kiely Lewandowski, *Serbia Urges UN to Call for ICJ Opinion on*

opinion on whether the use of nuclear weapons could ever comply with international environmental and health mandates, but the ICJ declined to answer because it was essentially a referendum on the use of nuclear weapons in general, which is outside the scope of the WHO's activities.¹⁴⁸ The management of the international virus-sharing system, however, is directly related to the right to health, which is enshrined in the WHO Constitution.¹⁴⁹ As such, the legal question of whether withholding virus samples is permissible under international law arises within the scope of the WHO's activities, and should therefore be within the ICJ's jurisdiction to decide.

B. THE WHO SHOULD ADD INCENTIVES TO THE INTERNATIONAL VIRUS SHARING APPARATUS SO AS TO ENCOURAGE DEVELOPING NATIONS TO PROVIDE VIRUS SPECIMENS AND INFORMATION

Indonesia has stated that it does not seek to sell virus samples for profit, but rather to gain access to vaccines for the very afflictions to which the country is most susceptible.¹⁵⁰ A virus-sharing system

Kosovo, JURIST, Sept. 12, 2008, <http://jurist.law.pitt.edu/paperchase/2008/09/serbia-president-urges-un-to-call-for.php> (reporting Serbian President Boris Tadic wanted the United Nations to seek an advisory opinion on the legality of Kosovo's independence because the opinion is "the most deserving interpretation of the principles of international legal order," and would significantly ease tensions).

148. See *Legality of the Use by a State of Nuclear Weapons in Armed Conflict*, Advisory Opinion, 1996 I.C.J. 66, 84 (July 8, 1996) (explaining that ICJ jurisdiction requires the requesting agency to be authorized to do so under the U.N. Charter, the opinion sought to be a question of law, and the question to arise within the requesting agency's scope of actions). *But see id.* at 97 (Shahabuddeen, J., dissenting) (suggesting that a different reading of the WHO's question would put the legal question within the scope of the agency's activities).

149. See WHO, Constitution of the World Health Organization, art. 1, July 22, 1946, 14 U.N.T.S. 185 (declaring the objective of the WHO to be humanity's realization of the highest possible health status).

150. See Supari Address, *supra* note 3 (advocating for a more just virus-sharing system, including fair apportionment of resultant drugs and vaccines); *Indonesia Says Bird Flu Virus-Sharing Battle Not About Money*, JAKARTA POST, Apr. 24, 2008, available at <http://www.thejakartapost.com/news/2008/04/24/indonesia-says-bird-flu-virus-sharing-battle-not-about-money.html> [hereinafter *Not About Money*] (listing the establishment of a multilateral trust fund, tiered pricing, and bulk purchasing as potential acceptable options affording developing nations vaccine access); Acep Somantri & Benny YP Siahaan, *International Solidarity Secures Global Health*, JAKARTA POST, Sept. 10, 2008, available at <http://www.thejakartapost.com/news/2008/09/10/international-solidarity-secures-global-health.html> (arguing that under the current system, developing nations would likely have little or no chance to obtain vaccines in the event of a pandemic).

acceptable to all parties should promote the contribution of samples,¹⁵¹ equitably share the benefits derived from contributed samples,¹⁵² bolster developing countries' access to vaccines,¹⁵³ and still respect national sovereignty. The WHO should consider modifying the international virus-sharing system to allow cooperative, developing countries greater access to low-cost vaccines than deliberately non-compliant developing countries.

Currently, because of its uncooperative policies, Indonesia should not receive assistance with purchasing vaccines. However, were it to again show a commitment to complying with virus-sharing customs, the WHO should afford Indonesia the option of buying vaccines at a bulk rate or through a tiered pricing scheme.¹⁵⁴ Because avian influenza mutates rapidly and thus requires that vaccines be constantly updated to be effective,¹⁵⁵ states will have an incentive to continually cooperate in order to ensure their long-term ability to procure vaccines because the vaccines they purchase this month may not be effective against the virus in six months.

C. THE INDONESIAN GOVERNMENT SHOULD RESUME SENDING
AVIAN INFLUENZA SAMPLES TO THE WHO IN ORDER TO COMPLY
WITH INTERNATIONAL OBLIGATIONS

To comply with international law, Indonesia should resume sending avian influenza samples to the WHO. Although Indonesia's ultimate purpose may be noble, the stakes are too serious to justify its means.¹⁵⁶ Avian influenza is the potential source of the next

151. See Fidler, *supra* note 28, at 88 (arguing that the lack of Indonesian virus samples jeopardizes important avian influenza objectives).

152. See Joint Statement, *supra* note 132 (emphasizing the need for short-term and long-term solutions to protect developing countries from threats).

153. See Sedyaningsih et al., *supra* note 24, at 486 (contending that those nations most affected by disease are the same nations whose samples lead to the development of vaccines that those countries are then unable to afford).

154. See *Not About Money*, *supra* note 166 (reporting the WHO received suggestions to consider different states' abilities to pay when implementing vaccine acquisition mechanisms).

155. See Manning, *supra* note 22 (explaining that avian influenza often collects genetic material from influenza viruses in other species).

156. See, e.g., Belford, *supra* note 5 (reporting that even those who sympathize with Indonesia question the prudence of the tactics); Holbrooke & Garrett, *supra* note 29 (labeling Indonesia's actions "morally reprehensible" because they increase the likelihood of a pandemic).

human pandemic, which could cause millions of deaths worldwide. The virus' particular lethality and prevalence in Indonesia makes access to their samples of paramount importance.

Certainly Indonesia's aim of raising awareness of an inequitable virus-sharing system is laudable.¹⁵⁷ It should not, however, justify endangering global health. Resumed cooperation in the virus-sharing system would permit important viral research and monitoring to continue unimpeded,¹⁵⁸ while simultaneously allowing a serious international discussion regarding the defective state of the WHO virus-sharing apparatus, to which Indonesia has successfully drawn the world's attention.¹⁵⁹

CONCLUSION

Timely sharing of dangerous virus specimens is of global importance. In pandemic prevention, imperfect knowledge produces imperfect containment efforts. Indonesia's decision to withhold avian influenza samples from the international community with the purpose of bringing about a more equitable virus-sharing system is a perilous tactic that endangers both Indonesians and people around the world. Although Indonesia has, indeed, drawn attention to an international virus-sharing scheme in need of reform, its noble end does not justify its dangerous means. A swift and lasting resolution to the standoff, in the form of an ICJ advisory opinion on the legality of withholding virus samples and the reformation of the WHO's virus-sharing mechanism, is necessary to adequately protect global health.

157. See, e.g., *Flu Holdout*, *supra* note 141 (acknowledging that the current virus-sharing schemes do not adequately protect developing countries); Walsh, *supra* note 143 (quoting the WHO senior representative who expressed appreciation after learning about the developing countries' concerns regarding inequity).

158. See, e.g., Paul Watson, *Scientists Warn Against Closing Navy Lab*, BOSTON GLOBE, July 7, 2008, available at http://www.boston.com/news/world/asia/articles/2008/07/07/scientists_warn_against_closing_navy_lab/ (indicating scientists could be caught off-guard and unprepared by avian influenza mutations without steady research of Indonesia's strains).

159. See, e.g., *Indonesia to Resume Sharing*, *supra* note 96 (stating the WHO welcomes the global attention drawn to developing countries' experience with the virus-sharing system).