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Building Trust, Taking Responsibility: Civil Society as Partners in Global Health Governance

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Today, in an interconnected world, bacteria and viruses travel almost as fast as e-mail and financial flows. Globalization has connected Bujumbura to Bombay and Bangkok to Boston. There are no health sanctuaries. No impregnable walls exist between a world that is healthy, well-fed, and well-off and another that is sick, malnourished, and impoverished. Globalization has shrunk distances, broken down old barriers, and linked people. Problems halfway around the world become everyone's problem.¹

– Gro Harlem Brundtland, Former Director General, World Health Organization

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¹ Gro Harlem Brundtland, "Global Health and International Security," *Global Governance* 9/4 (2003): 417.

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Note: Non-Governmental Organization (NGO) is used interchangeably with Civil Society Organization (CSO).

Executive Summary

As humanity braces itself for its next encounter with a global pandemic far deadlier than SARS, it is in danger of choosing quick-fix solutions over long-term structural changes, with potentially catastrophic consequences. Influenza vaccines, border closures, and quarantines, while necessary, will do nothing to rid the world of the H5N1 virus, whose underlying causes exist elsewhere - the interface of unsound farming practices, unsustainable development, and crippling poverty.

Taking a more broad-based approach from the perspective of civil society, we argue that controlling the looming avian influenza (AI) epidemic requires us to tackle simultaneously the global public health crisis. Since the poor cannot control epidemics on their own and the international system cannot fill the shoes of local governments, the global community, acting collectively, must invest in public health infrastructure, sanitation, and responsible development in the global South. Making these policies sustainable, however, requires comprehensive changes to agricultural practices, consumption patterns, trade regulations, and our interaction with our fellow citizens and our environment. Most if not all of these are addressed in the Millennium Development Goals agreed to by all countries in the UN system. It also requires engaging civil society in the structures of global health governance on all levels.

Ultimately, mainstreaming developmental, human rights, security, and environmental considerations into influenza preparedness-planning calls for the “human security” model, which—by placing health, wealth, security, prosperity, and sustainable development into one inclusive framework—is the only way to generate consensus among all stakeholders on the controversial policies needed to lead our societies away from high-risk practices, and out of the shadow of the virus – and to reduce and prepare for future threats.

Introduction

The world today has moved closer to a global influenza pandemic than at any time since 1968. Of the three pandemics in the 20th century, the most devastating was the 1918 Spanish flu which infected 25-30% of the global population and killed over 40 million people in under a year.² The 1957 and 1968 epidemics, though milder, still caused millions of deaths. The next one is in fact overdue, inevitable, and possibly imminent.³

Only a few months back, all discussion of “avian influenza” (AI) was limited to technical, if nervous conversations among infectious disease specialists, immunologists, veterinarians, agronomists, and public health authorities in international agencies and in the handful of affected countries of Southeast Asia. Today it is the topic of dinnertime conversations in homes everywhere - or, at least, as far as news of countries across Eurasia falling like dominos under the impact of the virus has travelled.

The challenge we are facing is tremendous: each year, 200,000 Americans are hospitalized and 38,000 die from ordinary (garden varieties) of flu, costing the US economy \$12-billion annually in direct medical costs and productivity losses.⁴ Some 1-1.5 million people die worldwide from flu infections or related complications.⁵ It is hard to imagine the devastation that

² WHO (2005), “Avian Influenza: Assessing the pandemic threat” (Geneva: 2005): 23.

³ Ibid; WHO, “Avian Influenza Fact-sheet” (15 January 2004).

⁴ Laurie Garrett (2005b), “The Next Pandemic?” *Foreign Affairs* (July/August 2005): 9.

⁵ Michael T. Osterholm, “Preparing for the Next Pandemic,” *Foreign Affairs* (July/August 2005): 2.

a far deadlier and untamable pandemic lasting 12-36 months could wreak. If an influenza pandemic struck today, the US alone could be looking at 80 million illnesses, 16 million deaths, and indescribable economic costs.⁶ And all signs are ominously pointing to a pandemic of proportions not witnessed since the Spanish flu of 1918-9 heading our way.⁷ But, this time, the world has an opportunity to defend itself *before* it strikes.⁸

Now that the alarm bells have gone off in the public health community, we believe it is time for a more reflective analysis, first, on the part of **civil society** about its civic responsibilities and role in AI preparedness planning, and, second, of the concept of “civil society” itself. The United Nations (UN) system has recognized civil society not only as a valuable partner but as an indispensable one for the UN efforts at the country level, especially in the field of health, which has always been of fundamental interest to CSOs around the world. This is true today more so than ever, as health emerged as a critical international threat, with its interrelated economic, agricultural, security, developmental, and ecological dimensions.

But it is also time to develop a greater understanding of the social determinants, and securitization, of health. Because conflicting perceptions of what a “threat” is have frustrated international cooperation,¹⁰ we approach the looming AI pandemic from different angles, taking an integrated, cross-sectoral, cross-regional perspective, in order to develop a common platform of understanding among all stakeholders.

Though we explore *one* specific crisis scenario, we place it within a broader context of a global healthcare crisis, poverty, insecurity, and environmental degradation. Our survey of how all of these issues feed into the AI’s pandemic potential makes manifestly clear the need for a comprehensive, sustained, multidimensional—multilateral—strategy which goes beyond public health services and existing programs. With common challenges and shared responsibilities inherent in fighting an infectious disease in the age of globalization, we need to catalyze complementary action beyond the health sector.

Part I follows the virus on its whirlwind track since 1996 as it travelled across Asia, Europe, and made a brief foray into Canada in the spring of 2004. Part II discusses the prospects and pitfalls of the global public health architecture and looks, in particular, at the role of civil society in institution-building. Part III shifts slightly the focus from the structures, participants, and processes of governance to its negotiations agenda and substantive issues. Part IV summarizes the main intellectual approaches to infectious disease, from which it distils the best practices in order to propose a new integrated model of transnational, multi-actor governance.

We understand that we run the risk of being criticized for stirring up public paranoia. But we believe strongly that public awareness-raising is the one way to avoid panic: to, in counterpoint, engage at risk communities and sectors in developing responses and solutions. There will be no place for preventive activities once tragedy strikes. All too often have we let “indifference [become] fear only after catastrophe hits...when it is already too late to implement preventive or control measures.”¹¹ The only question is whether we will have built, together, in time, the institutions sturdy enough to withstand its lethal blow.

⁶ Garrett (2005b), x.

⁷ WHO (2005); Osterholm, 17.

⁸ One element divides us from total disaster: the virus has yet to develop efficient human-to-human transmission (WHO (2005); FAO/OIE/WHO, “Consultation on Avian Influenza and Human Health: Risk reduction measures in producing, marketing, and living with animals in Asia,” Joint conference conducted in collaboration with the Malaysian Veterinary Services Department and Ministry of Health (Kuala Lumpur, July 2005)).

¹⁰ Kofi Annan, “In Larger Freedom: Decision Time at the UN,” *Foreign Affairs* (May/June 2005).

¹¹ Osterholm, 3.

Part I: Background: The countdown to disaster

Globalization has made the world a smaller place, but it has also made humanity more vulnerable to microbial threats. Ecological disruption, population growth, increased human mobility, poverty, wars and famine, migration, urbanization, and global production and distribution channels of food have all served as “facilitating variables” or “disease amplifiers” that have eased the epidemiological transition¹² of microbes into more pathogenic forms. No less than 29 new emerging infectious diseases (EIDs) have been identified since 1973,¹³ leading the WHO to declare a global health emergency as the spread of EIDs reached crisis proportions. Few have caused more concern than the avian influenza virus, whose 15 subtypes are known to be circulating in wild birds. Benign in its natural wildlife host-population, the virus evolves rapidly into pathogenic strains in domestic poultry.¹⁴ Of all the strains, the so-called H5N1 is of greatest concern due to its rapid genetic mutations, ability to acquire genes from viruses infecting other species, and incredibly high pathogenicity.¹⁵ First identified in wild geese in China’s Guangdong province in 1996, a bird’s flight away from Hong Kong, the virus spread rapidly through the country’s large domestic duck population of 660 million.¹⁶ In this “chain of transmission,” pigs, frequently raised alongside birds, served as a “mixing vessel” from which the virus could cross another species barrier.¹⁷ The first human infection was documented during a massive outbreak of H5N1 in Hong Kong in 1997, also traced to Guangdong,¹⁸ when the virus jumped directly from birds to humans, killing 6 and sickening 18 others.¹⁹ Hong Kong’s rapid destruction of its entire poultry population of 1.5 million (within 3 days) probably averted a global pandemic.²⁰

But H5N1 was not eliminated. It merely retreated to southwest China and came out of its hiding in 2003 December in a “super-virulent” form—more pathogenic, resilient, adaptable, and capable of killing a broader range of species, including rodents, tigers, cats, and humans. The outbreaks that followed in 2004 were the largest and deadliest on record: never before were so many countries ravaged by the avian flu at the same time, and never with such high fatality rate—both bird and human.²¹ The lethal strain first infected flocks in South Korea, Thailand, and Vietnam, then travelled to Japan, Tibet, Siberia, Russia, and reached Europe’s south-eastern shores in 2005 October.²² It had infected 109 people and killed 59 of them by May 2005,²³ a highly damning morbidity rate. By early 2005, with over 140 million chickens killed by the virus or destroyed and customers shying away, the unyielding HPAI outbreaks were disastrous for the Asian poultry industry, whose losses are estimated at US\$15-billion.²⁴ Even in the absence of

¹² Tim Evans et al., “L-20 and Global Public Health: Background Paper,” The G20 Project on Infectious Diseases & Global Health (San Jose, Costa Rica, November 11-13, 2004): 2; Andrew Price-Smith, “Contagion and Chaos: Infectious Disease and its effects on Global Security and Development,” *Centre for International Studies Working Paper* 1998/001 (Toronto, 1998): 28.

¹³ Obijiofor Aginam, “Between Isolationism and Mutual Vulnerability: A South-North Perspective on Global Governance of Epidemics in an Age of Globalization,” *Temple Law Review* 77 (2004): 3; Price-Smith, 4.

¹⁴ FAO/OIE (2005), “A Global Strategy for the Progressive Control of HPAI,” Outcome document from the 2nd FAO/OIE Regional Meeting on Avian Influenza Control in Asia (Ho Chi Minh City, Vietnam, 23-25 February 2005) (May 2005): 37.

¹⁵ WHO (2004).

¹⁶ FAO/OIE (2005): 37.

¹⁷ Pigs allow the AI virus to re-assort: in an infected pig cell, AI switches from an avian virus to a *mammalian* one. When that occurs, human epidemic can result. The H5N1 virus moved to pigs by April 2005. (Ibid, 35; WHO (2004); Garrett (2005b): 4-5).

¹⁸ FAO/OIE (2005): 37.

¹⁹ Garrett (2005b): 5.

²⁰ WHO (2004).

²¹ WHO (2005): 5, 13, 55.

²² For a more detailed chronology of the AI onslaught, see Appendix I.

²³ Garrett (2005b): 1.

²⁴ The poultry farm losses in 2004 cost Thailand US\$1.2-billion, Vietnam US\$0.3-billion, and all of Asia some US\$10-15-billion (WHO (2005): 54; Ibid, 5).

further human infections, the damage from another outbreak is set at US\$50-60 billion.²⁵ Yet this was by no means the worst: the evolution of the virus suggests a deepening threat.²⁶ The H5N1 has now become endemic in Southeast Asia, having found a permanent ecological niche in domestic poultry and asymptomatic ducks. Despite individual control measures, the AI continues to spread, leaving behind it economic, ecological, and human devastation. Russian authorities claim that “the infection cannot be contained, and it is impossible to isolate.” The avian flu “will have serious consequences for the environment, the economy, and primarily for human health,” making it imperative to legislate comprehensive anti-epidemic, sanitary, and veterinary measures.²⁷

The HPAI strikes Canada

As commercial and family farms across Eurasia, one after one, were falling prey to the HPAI, Canada was not spared either. On 6 February 2004, slightly increased deaths (8-16 per day) were reported among 9,200 chickens in one barn in Fraser Valley, B.C.; low pathogenic avian influenza (LPAI) was confirmed on February 16.²⁸ Though quickly quarantined and depopulated by the Canadian Food Inspection Agency (CFIA), within three weeks a *highly* pathogenic strain was detected in another flock on the same premise (H7N3), killing 2,000 birds in 2 days.²⁹ With this started the largest HPAI outbreak in Canada—the first since 1960.³⁰ Despite the containment efforts, the virus continued to spread, infecting another 42 commercial and 11 backyard farms south of the Fraser River. More drastic measures, including the destruction of 17 million chickens, turkeys, and ducks in the eradication operation, stopped the viral progress. Though the depopulation itself was suspended on June 4, all farms had to be disinfected to eradicate the virus that sought refuge in organic material, manure, bedding, feed, and dust; they were allowed to begin restocking on July 9; all remaining restrictions were lifted on August 18.³¹

These six months of the HPAI scare cost the B.C. chicken industry C\$400-million in farm sales, cleaning and disinfecting costs, increased biosecurity, and industry coordination.³² As trade partners banned imports of various poultry commodities—not only from B.C. but all of Canada³³—the total losses for the chicken industry were estimated at C\$100-million in the first year of recovery.³⁴ The Fraser Valley outbreaks also represent the first known case of human avian influenza H7N3 infections, suspected in 57 persons, confirmed in only two, and killing none.³⁵ We would not have been that lucky with the H5N1.

For a snapshot of the potential financial losses from an HPAI outbreak, even if limited to birds, we need only consider the following: the Canadian chicken industry provides 49,700 jobs, contributing C\$9.5-billion to the national economy and an additional C\$1.78-billion in wages and

²⁵ WHO (2005): 54.

²⁶ Ibid, 5.

²⁷ RIA Novosti, 06/09/05 - Avian influenza confirmed in 45 Russian settlements - chief veterinary inspector

²⁸ CDC (S.A. Tweed et al.), “Human illness from avian influenza H7N3, British Columbia,” *Emerging Infectious Diseases* 10/12 (December 2004).

²⁹ Ibid.

³⁰ Chicken Farmers of Canada (CFC), *Annual Report 2004: Standing Together* (Ottawa: CFC, 2004).

³¹ Canada, Government of Alberta (Agriculture, Food, and Rural Development), “Avian Influenza in British Columbia (2004),” CFC (2004a).

³² Canada, Government of Alberta, “Avian Influenza in B.C.”

³³ Japan, Singapore, China, Malaysia, Peru, Brazil and South Korea suspended the import of various poultry commodities from Canada, including live birds and poultry products. Romania, Mexico, Russia, Barbados, Philippines, Poland and Hong Kong limited their ban to B.C. products (Ibid).

³⁴ CFC (2004a).

³⁵ CDC (2004).

personal income.³⁶ The Canadian egg industry, valued at C\$995-million, employs another 4,000 workers.³⁷ Not only would the poultry and egg industry be hit, but so would the related sectors, including the feed, transportation, construction, avian equipment, packaging, grading, processing, and retail industries.³⁸ The 135 poultry primary processing plants and 122 chicken slaughter plants would be the next in line,³⁹ as would the hog industry if the virus jumps to pigs. The shockwaves would reverberate through the entire economy: the Canadian feed industry would contract under decreased grain demand, as 14% of its sales are directed to poultry and another 36% to hog farming (with 8,800 employees and total sales of over C\$3.2-billion, it is Canada's sixteenth largest manufacturing enterprise).⁴⁰ Grain farmers, union members, marketers, retailers, and restaurateurs—who are all civil society—would be directly impacted.

The potential economic damage would be multiplied exponentially should there be a human infection. Canadians will remember the economic impact of SARS in 2003, which cost the city of Toronto alone US\$30-million *daily* at the peak of the infection.⁴¹ The ravages to a very healthy economy and the longer term negative consequence of international disease control measures continue to be felt and debated by civil leaders.

Lessons relearned

The SARS experience should have been an eye-opener for the whole world community. The virus jumped to humans from infected animals that were sold and slaughtered in unsanitary and crowded markets of the Guangdong province. From there, it travelled to 5 countries within 24 hours and 6 continents in several months, causing 8,000 infections worldwide, with a 10% mortality rate.⁴² (In comparison, the Spanish flu took 18 months to twice circumnavigate the earth.). The crisis demonstrated that a lack of proper agricultural practices and sanitary standards in one corner of the world can imperil the livelihoods of people an ocean away; that infectious pathogens can encircle the globe in a matter of days in the age of international travel; and that public fear-caused behaviours can deliver the final blow to an already crippled economy.⁴⁴ This should have underlined the urgent need to strengthen the global disease-surveillance capacity, increase the reporting transparency, and improve regional cooperation.⁴⁵

The public health authorities did try to increase the control of microbials in its aftermath, yet it remains doubtful that we have internalized the critical lessons that SARS should have taught us. Despite the clarion call of SARS, and now AI, the international community continues to systematically under-invest in an efficient and effective global system of outbreak surveillance and response.⁴⁶ Yet investment in the global public health infrastructure is critically needed if we are to boost our survival odds. A virus is at its most lethal where the target population is already immuno-compromised by disease, malnutrition, and poor sanitation, or where the health

³⁶ CFC, "The Canadian Chicken Industry" (2005).

³⁷ Canada, Agriculture/Agri-Food Canada, "Snapshot of the Canadian Egg Industry" (November 1999).

³⁸ Ibid.

³⁹ Ibid, "Snapshot of the Canadian chicken industry" (December 1998).

⁴⁰ Ibid.

⁴¹ SARS had also shut down Asian travel for 3 months and cost airlines \$10-billion in lost revenues, China and South Korea of \$2-billion in lost tourism (and 0.5% of Hong Kong's GDP in 2003). (See Tim Evans et al.; David Heymann and Nick Drager, "Briefing Note on Public Health Security to the L20," Paper prepared for the G20 Project on Infectious Diseases & Global Health, 1; Aginam, 307).

⁴² Osterholm, 2-3.

⁴⁴ Ibid, 2.

⁴⁵ FAO/OIE (2005): 1.

⁴⁶ Evans et al.

infrastructure is unable to contain it. We know that the entire world would experience viral carnage should a pandemic strike, but we cannot estimate the extra devastation wrought on cramped refugee camps in famine-stricken areas, on sprawling slums lacking clean water and medical facilities, or the 49 million people living with HIV/AIDS.⁴⁷

So how can we prepare, in the context of a global healthcare crisis, for a pandemic far deadlier and far more difficult to control than SARS,⁴⁸ which will indiscriminately affect every sector of our society?

Part II: Global Governance vs. Microbial Globalization: Fending off the Virus

Global collaboration is the only way to fight epidemics in the age of globalization: a global disease requires a global health policy and governance framework involving a multiplicity of actors - from national governments to international agencies, private and corporate actors, to civil society.⁴⁹ Once we recognize that, by its nature, the AI lies at the complex interface between farming practices, livestock trade, food safety, and public health security,⁵⁰ we will understand that we cannot even begin to control it without adding extra seats to the table. In this section, we explore the overlapping layers of the global health architecture to underscore the need for participatory processes, multistakeholder consultations, cross-sectoral linkages, and local engagement in the transnational pandemic plans, starting with the overarching authority of the UN.⁵¹

The UN System and Related International Agencies: Responding to the AI

Although relatively localized and contained, the shock of the Asian tsunami in December 2004 exposed the poor shape of the UN's inter-agency coordination, prompting a critical review of the role of the UN in national preparedness plans in different countries. The AI caused a system-wide response within the UN: the appointment of a "Senior UN System Coordinator for Avian and Human Influenza" in September 2005 suggests the gravity of the crisis.

The World Health Organization (WHO) is the default agency when it comes to health-related issues, but the complexity of the AI makes it obvious that its work has to be complemented by other actors that are better placed to address the zoonotic or the security-side of health. We need nothing less than an integrated international health network, comprising the WHO, World Food Program (WFP), Food and Agriculture Organization (FAO), environment programme (UNEP), development programme (UNDP), national health institutions, as well as civil society representatives.

The WHO took the unprecedented step in 2003 of action of independently issuing global alerts and travel advisories against the SARS-affected countries without their authorization, causing them serious economic damage. Although some complained, including Canada, none

⁴⁷ Garrett, 2; WHO (2005): 43.

⁴⁸ Osterholm, 2.

⁴⁹ Aginam, 308.

⁵⁰ FAO/OIE (2005): v.

⁵¹ On the need for multi-stakeholder collaboration, see Ibid, 20; Colin Bradford, "Global Health and Global Governance: Prioritizing Health within the Framework of the Millennium Development Goals" (Brookings: January 14, 2005): 2, 11; FAO (2004), "Transboundary Animal Diseases: Assessment of socio-economic impacts and institutional responses," *Livestock Policy Discussion Paper 9* (02/2004): 42.

publicly challenged the WHO's authority during the outbreak. In fact, in May 2003, its members formally empowered it to take such actions in the future.⁵²

The decade-long revision of the International Health Regulations - the only set of legal rules on ID control binding on the WHO member-states - is to be completed in 2005. The updated IHR will supplement the global safety-net to rapidly detect and coordinate the international response to IDs that have not been effectively detected and contained nationally, already provided for by the WHO Global Outbreak and Alert Response Network (GOARN). (The latter, under development since 1997, has been supported by the Health Canada-maintained Global Public Health Intelligence Network (GPHIN)—the network that detected and coordinated the response to the SARS outbreak in 2003 and effectively helped compensate for the reckless reluctance, (at the least wrong-headed and dangerous) motivated by economic concerns, of some national authorities to disclose outbreaks promptly and frankly.⁵³) A key change will be the inclusion of information from NGO sources for epidemiological surveillance of ID outbreaks.

But the control of infectious diseases lies “beyond the responsibilities of any one organization,”⁵⁴ and defeating the HPAI calls for an inter-sectoral, inter-institutional approach. The **OIE**, World Organization for Animal Health, is another important participant; however, the OIE—and *all* agencies for that matter—are weakened by exclusive reliance on the official information provided by its member-states and their *voluntary* (and often problematic) compliance.⁵⁵ The WHO has already been working alongside the FAO and OIE to create “a master coordination plan with a global vision, defining the road map and time frames for the short, medium, and long-term priority activities, to be enforced and supported by individual countries and regional organizations.”⁵⁶ That was the first step toward elaborating a global strategy for the control of the highly pathogenic AI.

The institutions of global economic governance also cannot be on the margins. The **IMF** and the **World Bank** should relax the strictures which have a negative impact on the health sector.⁵⁷ The **WTO** could develop pro-health trade incentives and revise its Agreement on Sanitary and Phytosanitary Measures (a framework for the protection of human, animal, and plant health and life) while preventing the creation of unjustified trade barriers.⁵⁸ The **ILO**, for its part, could sponsor a Global Health Workforce Summit to resolve the problem of migration of skilled health-practitioners from the South.⁵⁹ The WHO should be engaged in all of these related initiatives.

National Preparedness Plans: Do national governments matter in the borderless world of microbes?

International agencies, however - for all their expertise - do not have the public accountability, and hence authority to impose and enforce far-reaching measures that may be necessary in a pandemic: it is the national governments, for better or worse, that do have such relevant authority.⁶⁰ Thus, the committed leadership of countries such as Canada, with direct

⁵² David Fidler, “Germs, governance, and global public health in the wake of SARS,” *Journal of Clinical Investigation* 113/6 (March 2004): 799-804. 3.

⁵³ WHO (2005): 43.

⁵⁴ Colin Bradford and Johannes Linn, “Global Economic Governance at a Crossroads: Replacing the G-7 with the L-20,” *Brookings Policy Brief* 131 (April 2004): 4.

⁵⁵ FAO (2004): 43.

⁵⁶ See FAO/OIE (2005).

⁵⁷ Barry Carin, “The L20 Rationale and Conjectures on its Value Added,” Prepared for the Third India-Canada Policy Dialogue (New Delhi: Asia Pacific Foundation of Canada & Centre for Policy Research, 12-13 April 2005): 11.

⁵⁸ FAO (2004): 44.

⁵⁹ Carin, 11.

⁶⁰ Bradford, 7.

experience of a deadly pandemic and the resources to fight a new battle, will be key in any effort to strengthen the global health governance.

It is encouraging that governments have, to varying degrees, taken steps to deal with the AI. On 14 September 2005, President Bush launched, before the UN General Assembly, the International Partnership on Avian and Pandemic Influenza with the aim of elevating the issue on national agendas; coordinating efforts among donor and affected nations; mobilizing resources; increasing transparency in disease reporting and surveillance; and, building the identification, containment, and response capacity.⁶¹ The EU foreign ministers, meeting in October 2005, issued a Europe-wide plan of action. Recognizing that the EU could not protect itself alone, they noted a “need for international action and international solidarity with countries in Asia.”⁶² Later in October, Health Ministers of 30 countries, hosted by Canada and convened in Ottawa address four themes on AI: animal/human health nexus; capacity and surveillance; risk communication and research and access to vaccines. But *all* need to do far more, beginning with a detailed blueprint on how to get their citizens through 1-3 years of a pandemic.⁶³ Every country’s national policymakers must develop a contingency plan at the *domestic* level for the worst-case scenario involving quarantines, weakened armed forces, dwindling hospital space, and vaccine scarcity.⁶⁴ This should involve all key components of the society: from the private sector (the medical community, medical suppliers, food providers, and transportation) to the government sector (public health, law enforcement, and emergency management) at all levels.⁶⁵ In January 2005, the Vietnamese government, for instance, established an interagency working group consisting of technical experts and senior staff members from ministries of health, agriculture, and rural development,⁶⁶ all in close consultation with the international agencies.

Beyond health ministries, finance ministries will also need to be represented to ensure concordance between these priorities and the broader fiscal constraints.⁶⁷ Agriculture also has to be at the table, given that the H5N1 outbreaks since 2004 have been catastrophic.⁶⁸ So does public security - an issue which we revisit in Part IV. At a time of heightened awareness of human insecurity and national vulnerability in world geopolitics, infectious disease represents a new, different kind of terror that the UN itself will have to address as it attempts to modernize its definition of terrorism.

Profit and Responsibility: The place of the private sector in disease-control

Ever since the governments’ ability to control and regulate infectious disease has diminished with the privatization, deregulation, and decentralization of animal health services,⁶⁹ the business community can no longer afford to play a minor role in planning the national response to a pandemic.⁷⁰ The Fraser Valley outbreaks, for instance, prompted the Canadian chicken industry to enhance biosecurity on all farms and to undertake comprehensive prevention measures by:

⁶¹ USA, State Department, “U.S. Launches International Partnership on Avian and Pandemic Influenza” (September 22, 2005).

⁶² EU Health Commissioner, quoted in “EU urges global bird flu response,” *BBC News* (18 October 2005).

⁶³ Osterholm, 3.

⁶⁴ Garrett, 8.

⁶⁵ Osterholm, 3.

⁶⁶ WHO (2005): 55.

⁶⁷ Bradford, 8.

⁶⁸ WHO (2005).

⁶⁹ FAO (2004): 12.

⁷⁰ Osterholm, 14.

- Establishing a multi-stakeholder working group to develop national biosecurity standards and effective implementation;
- Examining the feasibility of a rapid pre-emptive destruction and culling policy;
- Developing a national mortality disposal strategy for all livestock;
- Developing and implementing an Industry Risk Management Insurance Plan;
- Examining the need and feasibility of production insurance for chicken farmers;
- Devising biosecurity criteria for free-range farmers;
- Exploring the reduction of antimicrobials used sub-therapeutically in the Canadian chicken industry in view of the growing antimicrobial resistance;
- Establishing an animal care program to demonstrate the appropriate care given to Canadian chicken; and,
- Implementing public awareness, education, and information initiatives (“to dispel public misperceptions”)⁷¹ (or, as the case may be, to address public perceptions).

Businesses and individual farmers thus undeniably have a considerable responsibility to monitor, inspect, and report outbreaks. It is only open to debate whether voluntary codes of conduct can replace the need for mandatory regulation in the context of a looming pandemic. Short-sighted profit considerations have meant that the overall record to date, around the world, has not been encouraging. This has made it increasingly necessary to enlist the broad potential of civic responsibility—of consumers as civic actors—to lobby their governments and exert pressure on businesses to ensure compliance with the minimum standards of responsible behaviour.

Bolstering Defence from the Ground Up: The Role of the Civil Society

The nature of civil society players is varied—and varies by country—but it is evident that engaging their local knowledge and global reach in *all* policy processes on the avian flu will be crucial to reduce cross-sectoral losses. Who can best support, and often deliver, local healthcare? Respond to humanitarian crises? Identify the farmer sidestepping regulation because of poverty or recalcitrance? Organize and mobilize the public in non-coercive ways? Who is trusted? Not surprisingly, the WHO has struggled for years to make “germ governance” more inclusive—and effective—by relying on non-governmental or civil society organizations to challenge the state’s monopoly on public health: governments alone cannot handle global microbial threats.⁷²

Early engagement of civil society can provide legitimization, particularly where other partners may be missing it: neither international agencies nor national governments can match the level of the public trust in CSOs.⁷³

Second, civil society groups can play a unique role in awareness-raising, both in terms of prevention and risk-management, for instance, by making the public aware of the risk from poultry products.⁷⁴ They can identify gaps in either regulation or compliance and advocate change.

But the CSOs’ job-description goes beyond public advocacy to include key aspects of both implementation and delivery. In much of the developing world, health-related NGOs are making

⁷¹ CFC (2004a).

⁷² Fidler, 1.

⁷³ Kate: do you have the source? 77% of Canadians trust the UN; 79% CSOs.

⁷⁴ The virus has been detected in raw eggs, while infected raw meat caused the death of captive tigers; there is also increased exposure to virus from the slaughter and preparation of chicken meat for cooking (WHO (2005)).

up for the state's institutional weakness and impaired public-health delivery. Out of US\$25B in humanitarian assistance, US\$11B is CSO-delivered, the remainder through the UN, remembering that the UN itself contracts much of its aid to CSOs. (All numbers approximate.) Civil society is in fact “*essential*” for the sustainability of technical assistance (TA) (to ensure that the aid inflows can be absorbed by national health authorities—and translated into real care).⁷⁵

With their *grassroots* engagement in the local society and often acting as channels for community-based knowledge, CSOs often have a clearer picture of actual human and technical needs and capacities, which means that partnering with community groups can significantly increase our returns on health- and agricultural investment. Disease surveillance, which is severely hampered in states lacking a robust (and free) civil society, is yet another CSO task. Given the Chinese government's unwillingness to disclose the magnitude of the SARS outbreak, for instance, the WHO's ability to tap the NGO sources of epidemiological information was critical in containing the epidemic.⁷⁶

Expertise, analysis, and policy-formulation are also a purview of civil society. The massive shift from mainstream media to near real-time delivery of information and critical commentary in the “blogosphere” is evidence of the civil society's engagement with, and contribution to, public policy debates.⁷⁷

However, donor governments and international agencies often assume, wrongly, that developing countries have a civil society network that is able to participate in policy formulation, monitoring, and implementation.⁷⁸ Quite the opposite: many recipient countries have a weak or subordinated NGO sector that cannot be expected to offset the weakness in state capacity. This means we have to combine health investment with strategies to develop local civil society to administer that aid, and recognize that this is also a discrete and measurable development outcome.

There is an important international dialogue, building from the work of the UN High Level Panel on UN-Civil Society, chaired by Cardoso, that needs to take place. Using this great risk as an opportunity the global commons (including through the lever of an international conference with civil society engaged on AI which will take place in the first quarter of 2006) could begin to address the issues of trust at the level of established and international CSOs and the role of governments; extant CSOs -- even the private sector in ‘seeding’ CSOs in countries where civil society has not flourish – or where CSOs which might be faith-based can add a level of capacity where it is otherwise lacking.

Adding the Building-Blocs: Policy Harmonization and Institutionalization

Resolving the substantive problems will be bedevilled by a series of institutional deficits, jurisdictional overlaps, or procedural gaps which need to be addressed at the start.

First, there is the issue of a regulatory/policy vacuum spanning human and animal health and agriculture, which has to be filled in with an institutionalized, law-based, and thus enforceable regulatory framework governing biosecurity, vaccination, administration of antibiotics, animal movement, border control, culling and disposal of carcasses, farmer compensation, and the restructuring of the poultry industry, among others.

⁷⁵ Ricardo Kuchenbecker, “The Inverse Capacity Building Law: From Technical Assistance to Technical Cooperation Towards Global Health,” Prepared for the G20 Project on Infectious Diseases & Global Health (2004): 9.

⁷⁶ See Fidler.

⁷⁷ [reference to Craig's paper].

⁷⁸ Kuchenbecher, 6.

The second institutional problem is to harmonize the incongruent technical standards and regulatory policies concerning the management of live animal markets, compensation plans, capacity-building, and disease-reporting requirements, given that we are currently dealing with a mishmash of regulations to control AI in Asia.⁷⁹ Harmonization must occur within government bureaucracies as well as across government. A number of the governments who had sent health ministers to the Ottawa conference have staged ‘table top’ and other training and coordination exercises and otherwise updated crisis planning. Of course different countries will require some policies to be specifically tailored to their particular circumstances; common sense, however, suggests copying the best-practice examples available, such as Hong Kong’s control measures in 1997. Key to its successful response seems to have been a combination of factors, including centrally-planned and -enforced inspections and restrictions on operation of the farming industry and live-bird markets; registration and licensing regulations; and legislation providing the authorities with the capacity to respond effectively to animal disease outbreaks.⁸⁰ Many of the policies were highly invasive, yet the interest of public health seemed to have outweighed business concerns. Others tried emulating some of these steps, such as Vietnam, but considerable gaps between legislation and enforcement undermined its efficacy⁸¹

Ultimately we need to resolve the institutional deficit between public and animal health services. It is no coincidence that the countries most affected by the HPAI are the ones with inadequate veterinary services, inappropriate farm biosecurity measures, and deficient animal disease information systems.⁸² We have to build information bridges between public health and agricultural veterinary services and create an early-warning and surveillance system that will include agricultural personnel.⁸³ Institutional barriers between different agencies have been hampering their respective efforts to control the AI - despite their common agenda - but so has their jurisdictional overlap. In many cases, there is no clear division of labour between the principal international agencies, costing millions every year in duplication. Civil society should be empowered to work in these inter-institutional spaces as a watchdog providing oversight, facilitating coordination and strategic linkages, ensuring accountability, and offering a critical analysis of the nature of institution-building. There is also a role for CSOs as arbiters of jurisdictional disputes. As is the case with bureaucracies and government, exercises and simulations need to engage key civil society players – as has been routine for many countries in other types of disaster planning.

The same holds true of institution-building at the national level. Following an inquiry and analysis of the SARS outbreak and response in Canada, one of the responses was institutional reform in the shape of an all-new Public Health Agency Canada (PHAC). This followed on a series of earlier metamorphoses, starting with the transformation of Emergency Preparedness Canada (EPC), the Canadian government department, whose staff was largely former military types with operational experience of large deployments whose planning was on natural disasters and their ancillary damage to infrastructure; the agency then became the Office of Critical Infrastructure and Emergency Preparedness (OCIPEP) when Y2K was the leading risk factor, populated by technical whizzes. Following 9/11, it was reborn, staffed by intelligence specialists, as Public Security and Emergency Preparedness Canada (PSEPC). We cannot afford to scrap institutions every time disaster strikes and start from scratch. We risk a greater risk of thinking a transformed agency, transforms risk. This is a costly habit both in terms of wasted human

⁷⁹ FAO/OIE/WHO (2005): 3.

⁸⁰ Ibid.

⁸¹ Ibid.

⁸² FAO/OIE (2005): 12.

⁸³ “Prevention of Pandemics,” 1.

resources, lost institutional memory, and cheated public expectations. Instead, we should equip existing institutions to deal with any threat, be it Y2K, 9/11, flooding, global warming, meteor rain, or a new infectious disease. The response will be imperfect, as always, but more viable.

Once we have worked out who ought to be brought together for an innovative brainstorming session on avian influenza, and how to coordinate the resultant defence plans, the next step is to map out the meeting agenda, which we analyze in Part III. After introducing the vicious circle of poverty and poor health in the first section, we posit several short- to long-term strategies in section two, including the challenge of making money work and integrating animal and human health.

Part III: The Global Agenda: Putting Key Issues on the Table

Poverty and Ill-Health: Breaking the cycle

There would be far less cause for panic at a looming epidemic if the medical capacity around the world were in good shape. But it is not. The state of global public health has reached crisis proportions.⁸⁴ The world is nowhere near meeting the Millennium Development Goals (MDGs) on health by 2015: life expectancy gaps between the rich and poor have widened to 50 years between the two extremes—much of it due to IDs;⁸⁵ child survival rates have deteriorated in 15 African countries; former socialist economies of the old USSR have experienced reversals in life expectancy;⁸⁶ more people died of tuberculosis (TB), malaria, and AIDS in 2003 than in any other year in history.⁸⁷ The capacity to respond to global threats is severely off balance: the majority of world governments lack sufficient funds to act. In fact, *no* national health infrastructure today would be able to handle, at the same time, the burden of a pandemic disease, social disruption, and public panic. Yet the international community will look to the US, Canada, Japan, and the EU for answers, vaccines, cures, money, and hope⁸⁸—and so will their own populations.

The causes of the crisis yield to no easy solution. However, certain structural changes could go a long way to mitigate this situation and, by the same token, numb the impact of AI. Because AI outbreaks tend to afflict those countries that lack the capacity to contain them,⁸⁹ defeating the virus will require breaking the “deadly partnership of poverty and ill health.”⁹⁰ For instance, we know that 44% of all deaths in the developing world—as opposed to 6% in the richer nations—are preventable (stemming from poor maternal and prenatal conditions, respiratory infections, and nutritional deficiencies) and that inequitable health conditions claim 17 million lives each year, amounting to 1/3 of all deaths.⁹¹ If a mere \$34 per person per year were put forward for healthcare, education, and sanitation, every year we could save 8 million lives by 2010—with direct and indirect economic benefits totalling \$360-billion annually.⁹²

⁸⁴ Bradford, 1.

⁸⁵ Other factors contributing to mortality include “rapid urbanization in poor nations, globalization of human and livestock movement, abysmal urban infrastructures, declining drug efficacy owing to microbes’ resistance and suboptimal treatment due to resource scarcities and social issues” (Laurie Garrett (2005a), “Leaders Summit on Global Infectious Disease: Toward an L20?” Paper prepared for the *G20 Project on Pandemics* (Geneva, May 2005): 1).

⁸⁶ Evans et al.

⁸⁷ Garrett (2005a): 2; Osterholm, 2.

⁸⁸ Garrett (2005b): 2.

⁸⁹ On mutual interest, see Heymann and Drager, 4.

⁹⁰ Aginam, 311.

⁹¹ Anil Soni, “Conjectural Communiqué,” Prepared for the *G20 Project on Infectious Diseases & Global Health* (Nov. 2004): 3.

⁹² Ibid.

But public health systems have also been in decline in rich nations. The anthrax scare in the US in 2001 underscored the federal and local health agencies' inability to respond effectively, either to bioterrorism or epidemic threats. Since then, the US Congress has authorized increased investment in the public health infrastructure. Despite this, the United States, as most other countries, remains tremendously vulnerable.⁹³ One of the greatest weaknesses that each nation must address is the inability of its hospitals to accommodate a sudden surge of patients; medical cost-cutting in recent years has reduced the number of available hospital beds to the point of making it difficult to meet the demand even during the normal flu season.⁹⁴

The historically unprecedented HPAI outbreaks that exploded in Southeast Asia's poultry sector in 2004 underscored the high correlation between national intervention capacity and industrial practices on the one hand and the spread of the virus on the other. Which of the affected countries fared the best? Japan and Korea—where the disease remained limited to commercial farms, rapidly detected, and hence effectively contained. Hong Kong's successful containment of the virus in 1997 was similarly facilitated by its adequate epidemiological and lab capacity and surveillance systems.⁹⁵ Control measures were less successful in Thailand and Vietnam where nearly every household kept a flock of free-ranging chickens and ducks. Cambodia and Laos were even worse off, because they could not raise sufficient funds to contain the spread, while Indonesian health authorities had their hands full with a huge outbreak of the dengue fever that had infected 58,000 people and left 650 dead, sparing few resources to handle an animal disease.⁹⁶

It is also not a coincidence that the big “success stories”—i.e. the countries⁹⁷ that managed to control and eradicate the HPAI infection on their chicken farms—were a handful of wealthy nations in Europe and North America. This was not merely a matter of having the resources for a rapid *response*, but also of having the right *preconditions*—an organized and sanitary commercial poultry sector, which in themselves are a function of domestic resources and health standards. Having an integrated private sector with robust state support certainly helps absorb potential financial losses of preparedness.

Clearly, in countries strapped for cash or bogged down with other immediate diseases competing for scarce resources, preparing for a future emergency or containing an animal infection may seem a luxury.⁹⁸ Yet the one luxury the world cannot afford to take is to ignore an animal disease like the HPAI. *Preparedness* planning, by its very nature, cannot be put off until the onset of the catastrophe. Instead, we ought to invest in preventive measures, early warning to halt the viral mutation or forestall its spread, and the development of a globally available vaccine.⁹⁹

Making Money Work: Capacity-building and technical assistance

Financing is thus a big question that has to be resolved right at the outset. Donors have already responded to the alarm, but US\$18-million in emergency funds will run out by end of 2005.¹⁰⁰ The cost of a global influenza prevention and control plan is estimated at C\$300-million per year for 5 years, which could be secured from Ministries of Health, private investment banks,

⁹³ Garrett (2005b): 8.

⁹⁴ Ibid.

⁹⁵ WHO (2004).

⁹⁶ WHO (2005): 13.

⁹⁷ FAO/OIE (2005): 10.

⁹⁸ WHO (2005): 44.

⁹⁹ Ibid.

¹⁰⁰ FAO/OIE (2005): 23-4.

insurance and risk management companies, as well as airlines—which have already expressed interest in a fund that would help them lower the financial risk of global epidemics.¹⁰¹

Money is clearly critical for the success of the global response, but beyond the price tag lies the far greater challenge of making money work.¹⁰² We can only get our bang for the buck if we situate the AI funding in the real-world context: we need to sustain intervention in health beyond the H5N1; invest in technical assistance (TA) and absorptive capacity and deal with the politically tricky question of health worker brain-drain; and, provide leadership on trade to ensure access to drugs.¹⁰³ The civil society has to be engaged in all of these activities, both to act and monitor but also as trusted implementing partners.

First of all, the AI framework must not turn out to be a flash in the pan like too many other health investments.¹⁰⁴ It will be critical to develop AI plans and partnerships that can be sustained over the long haul, even if the world scrapes through once again without a human pandemic of H5N1 or makes a narrow escape as it did in 1997. We cannot predict that an H7N8 outbreak, say, would not be even deadlier. CSOs could be broadly empowered to monitor states' delivery on their promises and partner on oversight to ensure that funds are not squandered on other activities.

Second, a good portion of the investment ought to be devoted to **capacity-building** at the local level. The AIDS, TB, and malaria crisis in the global South carries important lessons in this regard for the current AI efforts. Even where the global donors found sufficient resources and political will, they faced the challenge of implementing accelerated, large-scale programmes in resource-poor settings. Inadequate capacity in the recipient countries has been a principal limiting factor for stamping out IDs.¹⁰⁵ Some 50% of the projects submitted to the Global Fund to Fight AIDS, TB and Malaria (GFATM) for financing are never approved due to technical imperfections, especially a lack of absorptive capacity. The Global Fund took back its money earmarked for the Ukraine precisely for that reason.¹⁰⁶ Any health-related financial aid package has to incorporate the necessary technical aid to help countries run their programmes on their own, develop the local public health infrastructures capable of absorbing the large influx of aid, and facilitate the training of local personnel. The latter, however, is not straightforward, given the lack of human resources in the developing world: staffing problems, compounded by the problem of health worker migration, have been hampering the ability of 17 out of 22 countries with the highest TB burden from reaching their health targets by 2005.¹⁰⁷

All of this also raises the issue of transparency of financial aid: despite our well-intentioned programmes, are we not choosing, through the neglect of donor countries and the complicity of corrupt regimes, the triage of the vulnerable? When such little “politically-correct” questions pop up, the independent voice of civil society becomes critical, as does its freedom of action, in order to guarantee that multilateral assistance reaches its target population. In these situations, civil society organizations provide “servant leadership,” acting at once as watchdogs, advocates, and vehicles of know-how transfer. Expert agencies come up with elaborate statistics on primary healthcare and sanitation; but it is local NGOs that convert epidemiological facts into a lifesaving bar of soap in a hygiene kit distributed in a refugee camp.

¹⁰¹ Heymann and Drager, 7.

¹⁰² Soni, 3.

¹⁰³ Ibid.

¹⁰⁴ Despite a loud rhetorical commitment to disease financing, aid not only continues to fall short of the WHO targets, but has been cut in recent times (Soni, 4; Garrett (2005a):10).

¹⁰⁵ FAO/OIE (2005): v.

¹⁰⁶ According to Kuchenbecker, bilateral initiatives, like the US AIDS program, might thus offer an “advantage over the Global Fund, which simply making grants.”

¹⁰⁷ E.g. Zambia's public sector retained only 50 of its 600 physicians trained from 1978 to 1999 (Soni, 6).

Preparing for the Long Haul: Taking an integrated approach to human and animal health

Animal Health: Our vanguard defence

With all of the talk about the staggering human losses in an influenza pandemic, it is easy to forget that avian flu is first and foremost an *animal* disease whose effective prevention lies in the realm of animal health. The causative viral strains in all three major influenza pandemics in the 20th century originated from animals (pigs in 1918 and 1957 and birds in 1968).¹⁰⁸ Over the last few decades, on average one new emerging infectious disease per year has been identified—75% of which of the zoonotic type.¹⁰⁹ Livestock disease outbreaks have caused more than US\$60-billion in economic damages worldwide over the past 15 years.¹¹⁰ Evidently, a “global system of animal health protection is a global public good.”¹¹¹ The prevention and control of transboundary animal diseases (TADs) calls for complex cost-sharing and funding mechanisms of preventive and remedial action—which is something that not all countries can face by themselves. The public-good nature of TAD prevention implies a need for *collectively*-agreed, -funded, and -managed responses.¹¹² In effect, humanity’s first line of defence against AI rests with responsible farming practices and reasonable globalization of responsibility for this.

Stamping out the virus through agricultural reform

The WHO has concluded that fundamental changes in agricultural practices may well be the only viable long-term solution to stop the onslaught of AI.¹¹³ Though costly and controversial, the necessary measures include dealing with high-risk practices related to poultry farming and marketing, including live bird markets, farm hygiene, and the separation of animal species.¹¹⁴

Asia’s live poultry markets are considered to be the “missing link in the epidemiology of influenza.” Some 20% of the chickens sold in Hong Kong’s live poultry markets were infected with the H5N1 virus and later identified as the source of infection in its chicken farms in 1997; H5N1 was also discovered in the geese sold in the live poultry markets in Vietnam some 3 years before the chicken farms outbreaks in 2004.¹¹⁵

How to deal with asymptomatic domestic ducks that are silently seeding outbreaks in other poultry¹¹⁶ is another unsavoury issue. Studies in Vietnam have confirmed that some 20% of seemingly healthy ducks are constantly shedding the HPAI virus.¹¹⁷ Vaccination is a non-option since ducks seem to react differently to the vaccine from chickens, and even continue to excrete the virus in increased quantities. Now that we know the role played by domestic ducks as a “reservoir of disease” in Southeast Asia¹¹⁸, and still let this situation go on, we are in fact making the whole human population a sitting duck for the virus.

¹⁰⁸ FAO (2004): 28.

¹⁰⁹ FAO/OIE (2005).

¹¹⁰ Bio Economic Research Associates, 04/04/05

¹¹¹ FAO (2004): 15.

¹¹² Ibid, 5.

¹¹³ WHO (2005): 55.

¹¹⁴ FAO/OIE (2005): 16.

¹¹⁵ FAO/OIE/WHO (2005): 2.

¹¹⁶ WHO (2005): 13.

¹¹⁷ FAO/OIE (2005): 17.

¹¹⁸ Ibid, 12.

Outbreaks in rural areas, which escape detection and evade control, are the main source of increased human exposure.¹¹⁹ Thus, regulating and, ultimately, reducing the prevalence of duck and chicken farming suggests itself as the most effective strategy to deny the virus access to its preferred host population. This, however, is not straightforward in regions where 50-80% of poultry farming is done in small households for which the birds provide a source of income, 30% of the dietary protein, as well as an “insurance policy” for raising cash to buy medicines.¹²⁰ The AI outbreaks on poultry farms are most devastating in regions where agriculture is undiversified.¹²¹ Any necessary changes to farming practices therefore have to find, simultaneously, a replacement for the poultry protein and an alternative source of income and employment for the farmers through rural development, education, or financial aid. This underlines the role of national governments in monitoring, educating, and enforcing - and of the international community, including CSOs, in underwriting these efforts.

Ultimately, it is not by coincidence that aquatic viruses are more likely to pass into domestic animals - and then humans - in China than anywhere else in the world.¹²² One cause is ecological disruption: dense concentrations of humans and livestock have left little of the wild birds’ original migratory routes intact, such that birds are now forced on their annual travels from Indonesia to Siberia and back to search for sustenance in farms, city parks, and industrial sites, where they intermingle - and infect - domestic birds. Another cause is its “peculiar agricultural system:” for centuries, Chinese farmers have raised chickens, ducks, and pigs together in tiny backyards surrounding their homes, thereby greatly increasing the risk of infection.¹²³ There is also the interface of economic development and poor sanitation: with China’s rising GDP, the appetite of its 1.3 billion people for chicken meat is also growing. Chicken farming, with over 13 billion birds, is thus quickly turning into a major industry rivalling large US farms in scale, but lagging behind in hygienic standards.¹²⁴ All of these factors have combined to facilitate a rapid spread of AI. Without resolving the problem of avian flu in China, we cannot hope to efface the virus from anywhere else. There is not only a special onus on national governments to secure Beijing’s cooperation and support its domestic awareness-raising programs, but also on transnational civil society networks to aid their Chinese counterparts in order to facilitate the creation of grassroots organizations capable of launching local plans to sensitize China’s large farming community to the risks of AI.

But there are other issues amplifying the AI’s deadly potential that need to be resolved, which go beyond production practices and are tied up with some of our most prized habits and values - our increasingly unsustainable consumption patterns and dietary demands. These raise, in turn, the problems of agricultural antibiotics, antimicrobial resistance, vaccine scarcity, intellectual property and international trade regulations.

Weakening Our Immunity: Consumption patterns, agricultural antibiotics, and antimicrobial resistance

Dealing with the AI also calls for government regulation to resolve the long-standing conflict between the routine livestock application of antibiotics and their targeted use to protect human health. Antimicrobial resistance is as much about economics as it is about health. Most

¹¹⁹ WHO (2005): 13.

¹²⁰ Ibid.

¹²¹ FAO (2004): 27.

¹²² Garrett (2005b): 4.

¹²³ Ibid.

¹²⁴ Ibid.

animal and plant antibiotics added on a daily basis to livestock feed, aquaculture waters, seed stocks, trees, and vines are used as growth promoters, and the industry is indisposed to give them up: bigger animals, fish, and fruit bring bigger profits. The problem is that many growth promoters, being chemically identical to medicinal antibiotics, cause microbial resistance to antibiotics administered to humans.¹²⁵ The misuse of antimicrobial drugs in agriculture, by limiting the efficacy of life-saving health technologies and making individuals more vulnerable to microbial-related mortality, is a direct threat to global health.¹²⁶

The world must radically rethink its use of growth promoters and possibly prohibit their sale for non-medicinal purposes.¹²⁷ The EU has already limited the sale of some agricultural antibiotics and banned others altogether - with immediate results: the related antibiotic-resistant diseases in humans have declined markedly.¹²⁸ In April 2005, five major medical and environmental groups filed a formal regulatory petition with the US Food and Drug Administration (FDA) urging it to ban the use of antibiotics as agricultural feed additives for chickens, hogs, or beef cattle.¹²⁹ In response to consumer concerns and the EU import ban, many profit-sensitive American chicken producers have also eliminated agricultural antibiotics from their flocks.¹³⁰

In Defence of the “Precautionary Principle:” Public health and international trade rules

Though justified from a public health perspective, however, for as long as we lack international standards on antibiotic usage, such actions remain open to a legal challenge. The transatlantic beef trade wars offer a cautionary tale: in 1999, the European Union blocked imports of all hormone-treated beef for public safety reasons - citing the so-called “precautionary principle.” American and Canadian governments, however, denounced the policy as a non-tariff barrier to trade, took the EU to the WTO - and won three times. The EU, for its part, dutifully paid its penalty and continued to block hormone-treated beef from ever reaching the shelves of its supermarkets. The story paints a stark contrast not only between two types of government - but also two kinds of consumers. Every democratic government in the West is a reflection of its civil society. The Canadian government hauled the EU before the WTO trade panel and continued actively encouraging beef consumption even after a documented case of BSE¹³¹ - because it had come under pressure from its cattle lobby. This move would have been less uncomplicated had Canadian NGOs and public interest groups taken an equivalent interest in the *health-effects* of growth hormones in Canadian beef. In Europe, in contrast, the dispute over GMO foods and labelling shows that consumer consciousness has reached new levels, which Brussels is merely echoing before the WTO panels, despite the tremendous costs of trade retaliation. The EU tactics of paying the penalties and keeping the regulations is sustained by strong public support: “EU consumers [themselves] could doom GM products in the market as effectively as any official ban.”¹³² Consumer groups thus have a duty to elevate the public health consciousness and promote responsible consumer behaviour through educational activities, information dissemination, and

¹²⁵ Garrett (2005b): 13.

¹²⁶ David Fidler (2004b), “L20 Communiqué on Global Health,” Prepared for the G20 Project on Infectious Diseases & Global Health (November 2004): 6.

¹²⁷ Garrett (2005b): 13.

¹²⁸ *Ibid.*, 14.

¹²⁹ E.g. American Academy of Pediatrics, American Public Health Association, Environmental Defense, Food Animal Concerns Trust, and Union of Concerned Scientists (in 10/04/05 - Medical Groups Petition FDA to Ban Antibiotics as Feed Additives).

¹³⁰ Garrett (2005b): 14.

¹³¹ Canada, DFAIT, “Canada Takes Further Action to Support: Canadian Beef Industry”, *DFAIT Press Release* (July 18, 2003).

¹³² John Feffer, “Trans-Atlantic Food Fight: The stakes in the U.S.–Europe battle over genetically engineered crops,” *The American Prospect* 14/5 (May 2003).

public advocacy. If the price of reining in the spread of avian influenza comes down to smaller tomatoes and fewer chicken eggs, it can be argued that it is one well worth paying.

To reduce the incidence of trade disputes, damaging both to the economy and to health, we ought to support the establishment of a joint WHO/FAO commission to review the use of *all* growth promoters and identify the ones playing a role in increased drug resistance,¹³³ develop a global action plan on antibiotic resistance with country-level monitoring and reporting,¹³⁴ as well as enforce standards which, caused by short-term need, might also herald long-term equity.

In the interest of public health, Canada should consider the European regulations on the use of antibiotics in domestic agriculture even before an international agreement is brokered and consider issuing similar guidelines on high-risk meat imports.¹³⁵ In a continuing tale of interconnectedness, Canada must address challenges inherent in unilateral action such as this against our obligations under the North American Free Trade Agreement (NAFTA). This plan of action can only be implemented in close consultation with the Canadian farming community - which is ultimately not only responsible for operationalizing new rules but which will also experience their effects on its bottom-line. The poultry farmers therefore need to be at the table from the start. Perhaps restricting the use of human-related antibiotics on poultry will bring about a fall in profits in the short-run; however, the long-term damage of not doing so could be much greater.

It is one thing to get farmers and agronomists in Canada to agree to abide by these rules and quite another in the developing world. The smallholder poultry sector in the 5 Southeast Asian countries where the HPAI virus has now become endemic accounts for some 60-70% of the total chicken production and comprises some 200 million poor farmers - with little or no access to preventive treatment, disease information, and veterinary services.¹³⁶ The Chinese farmers, for instance, reportedly acting with the government approval and encouragement, have tried to suppress major avian influenza outbreaks among chickens with amantadine - one of two antiviral drugs used for treating human influenza.¹³⁷ The Chinese Agriculture Ministry approved the production and sale of the drug for use in chickens - in violation of international livestock guidelines.¹³⁸ Despite Beijing's denials,¹³⁹ local pharmaceutical executives and veterinarians assert that the drug has been widely used to control the virus since the 1990s - although China did not report an outbreak until February 2004.¹⁴⁰ By then, researchers determined that both drugs had become ineffective against the H5N1.¹⁴¹ However, with international experts facing barriers to access, we can only speculate the extent to which the Chinese misuse of the flu medication has contributed to this.

The need to comply with international standards on vaccination is self-evident. Japan even threatened Thailand with a poultry import ban if Bangkok went ahead with its vaccination policy to control the spread of the HPAI, for fear it could lead to a more virulent mutation and make it difficult for scientists to distinguish between the infected and the vaccinated birds. The Japanese

¹³³ Garrett (2005b): 14.

¹³⁴ Fidler (2004b): 6.

¹³⁵ As a result of BSE, the Canadian Food Inspection Agency issued a regulatory proposal to remove Specified Risk Material (SRM) from the animal feed chain, i.e. to ban bovine remains from being fed to other farm animals (CFC (2004a)). The agency ought to review the animal feed restrictions in order to ensure that the SRM would also encompass parts from dead chickens and consider banning the imports of meat that may have been fed in such a way.

¹³⁶ FAO/OIE (2005): 12, 19.

¹³⁷ 18/06/05 - Misuse of anti - flu drug seen in China

¹³⁸ 18/06/05 - Misuse of anti - flu drug seen in China

¹³⁹ Bloomberg, 21/06/05 - UN Teams Arrive in China to Inspect Avian influenza Site

¹⁴⁰ 18/06/05 - Misuse of anti - flu drug seen in China

¹⁴¹ 18/06/05 - Misuse of anti - flu drug seen in China

regulations now require Thai animal health authorities to certify each shipment.¹⁴² Because of its actions to protect public health, however, Tokyo could be accused of trade protectionism much in the same way that the EU had been, as extra administrative requirements or precautionary measures are often seen as non-tariff barriers (NTBs).

International trade considerations have typically disadvantaged the cause of global public health.¹⁴³ Although trade policies profoundly affect health, there have been few incentives for trade ministers to adopt health-minded policies.¹⁴⁴ Instead, they have tended to limit access to life-saving drugs via agreements on intellectual property rights¹⁴⁵ or to abolish the right of governments to resort to the “precautionary principle” in the interest of public health.

The AIDS epidemic and a growing human rights approach have made some inroads in recent years into the anti-health bias of international trade agreements. A confluence of vocal civil society pressure on Western governments and producers and the resultant concessional pricing by patent-holders and generic competition brought down the price of the AIDS cocktail, for instance, from US\$15,000 to US\$150 per person per year.¹⁴⁶ The WTO’s Doha Declaration on the TRIPS Agreement and Public Health in 2001 was another step forward, which gave this growing consensus a basis in law: it established that TRIPS does not, and should not, prevent the WTO member-states from taking measures to protect public health.¹⁴⁷ But the battle over the impact of TRIPS on access to essential drugs is far from over - and is certain to increase in the event of a pandemic. Access to medicines is therefore a key issue that the international community will have to regulate - and ensure participation of the major manufacturers.

Too Little, Too Late: Global vaccine scarcity

The trouble with the H5N1 virus, unlike with the “garden varieties” of avian flu, is that we cannot predict the vulnerable age group - which means that *all* people who come into contact with the virus are at risk. For the United States alone, this translates into a need for at least 300 million doses of vaccine - the amount the whole world together produces in a year.¹⁴⁸ To make matters worse, vaccines are produced commercially in just 9 countries—Australia, Canada, France, Germany, Italy, Japan, the Netherlands, the United Kingdom, and the United States—home to barely 12% of the world’s population, while the total number of private companies willing to produce influenza vaccines has plummeted from some two dozen in 1980 to just a handful in 2004, owing to corporate mergers and financial investment risks.¹⁴⁹ In 2003, the entire world market for vaccines, from polio to measles to influenza, made up less than 2% of the global pharmaceutical trade.¹⁵⁰

If the *entire* US vaccine production system, which can make 180 million seasonal flu vaccines, was devoted to making AI pandemic vaccine instead (two shots at 90µg of flu antigen, as opposed to a single shot of 15µg), it could inoculate barely 5% of its population.¹⁵¹ The US

¹⁴² \26/07/05 - Japan against thai poultry vaccination

¹⁴³ Fidler (2004a): 2.

¹⁴⁴ “Prevention of Pandemics,” Report on the L20 Workshop (Geneva, May 15, 2005): 1.

¹⁴⁵ Fidler (2004a): 2.

¹⁴⁶ Soni, 7.

¹⁴⁷ Canada, for instance, has allowed generic manufacturers in high-income countries to export to the developing; the EU is considering similar legislation, but with an explicit proviso prohibiting their re-importation. The US, in contrast, has been criticized for doing the reverse: restricting the range of diseased covered by Doha and negotiating bilateral free-trade agreements with more far-reaching IP provisions—“TRIP-plus” (Ibid); Fidler (2004a): 4.

¹⁴⁸ Garrett (2005b): 8.

¹⁴⁹ Ibid, 6; Osterholm, x.

¹⁵⁰ Garrett (2005b): 6.

¹⁵¹ Nature News 10/08/05 - Avian influenza vaccine - Positive results.

government now plans to stockpile the vaccine to protect 20 million first-responders in the immediate aftermath of a pandemic and has already bought 2 million H5N1 vaccines (and intends to buy 20 million more); but, given the test results, these would protect only 330,000 to 3.4 million people, far short of the US goal.¹⁵² And, were the US vaccine production to falter again as it did in the 2004 flu season, it could not rely on Canada or Germany to bail it out again, because, in a “global scramble for vaccine,” governments might seek to block foreign access to their supplies, ban exports, nationalize the domestic production facilities, or refuse to share their vaccine (just as Washington had done in 1976, in anticipation of the swine influenza, H1N1).¹⁵³

Global flu vaccine scarcity therefore poses a serious problem.¹⁵⁴ It is only of limited relevance, however, to most of the world’s population. Even if the pharmaceutical industry managed to produce enough supplies for the West, over 6 billion people in the developing countries would go unvaccinated, at least 30% of whom, and possibly 50%, would get infected in a pandemic.¹⁵⁵ Yet national pandemic influenza preparedness is inherently an international issue: if the whole world lacks access to the vaccine and medical supplies, even the vaccinated will face devastation when the global economy stops dead in its tracks.¹⁵⁶ “Health for All” is in everyone’s national interest. Instead of hoarding the vaccine in the West, experts recommend releasing the antidotes to the most vulnerable countries.¹⁵⁷ The regions that are the first to be hit will also be our first line of defence.

Besides, not only is advance stockpiling ineffective from the point of view of containment, but it is not even feasible, because a true pandemic vaccine must match the actual strain of the virus and therefore wait for its emergence.¹⁵⁸ Finally, experts caution against letting optimism over the early vaccine test-results detract from the need to invest in pandemic preparedness.¹⁵⁹ After all, virtually every other piece of medical equipment, from gloves and respiratory protection masks to mechanical ventilators, will be in short supply, as the comparatively contained SARS outbreak in Toronto taught us. Today two US-based companies produce most of the world’s masks from multiple component parts imported from various countries. If travel and transport were restricted in a pandemic, neither would be able to meet a jump in demand - in fact, masks may not be produced at all.¹⁶⁰

The WHO convened a meeting in November 2004 to map out the respective responsibilities of all the key stakeholders - the industry, regulatory authorities, governments, and the WHO - to ensure a sufficient supply of the vaccine, which brought together all of the major influenza vaccine manufacturers. The predicted shortfall can only be overcome through collaboration among governments, industry, and the scientists in the form of public funding, research, and partnerships.¹⁶¹ The pharmaceutical industry made some headway on R&D following the initial H5N1 alert in January 2004, but more remains to be done. Companies still lack financial incentives to invest in a product which may never reach the market and thus never turn a profit. It might be worth considering a US legislation from 1976 that made the federal

¹⁵² Nature News 10/08/05 - Avian influenza vaccine - Positive results.

¹⁵³ Osterholm, 15.

¹⁵⁴ The real impact of vaccines is actually still unclear. Despite the rapid vaccine development in 1957 and 1968, limited production capacity meant it arrived too late to be effective (WHO (2005)). We clearly cannot put all of our eggs in the vaccine basket.

¹⁵⁵ Garrett (2005b): 7.

¹⁵⁶ Osterholm, 14.

¹⁵⁷ Author Interviews, Geneva, 2005.

¹⁵⁸ WHO (2005): 46.

¹⁵⁹ See Nature News , 10/08/05 - Avian influenza vaccine - Positive results.

¹⁶⁰ Osterholm, x.

¹⁶¹ WHO (2005): 45.

government assume the corporate liability to encourage a quick development of the swine flu vaccine; the pandemic never happened, and Congress never again passed a similar law.¹⁶²

Thus, the whole world will have to rely on the wealthy countries' good sense to develop a vaccine against a pandemic virus - a complex and costly undertaking¹⁶³ - *and* to share it with the poor. This calls attention to a whole host of triage issues that have traditionally been discretionary and taboo: do we inoculate the feeble, the brilliant-minded, or the kind? What is the role of civil society in a situation where the public trust in its government begins to disintegrate and informed consent no longer applies? At what point do we close our eyes to the difficult choices being made? Whatever vaccine scarcity tells us about our societal values, one thing is clear: we cannot allow it to knock down the norms of humanity.

Part IV: Threat Perceptions: Reframing Public Health and Infectious Disease Control

Up to this point, in the context of state capacity or traditional farming practices, we have discussed the significant *structural* obstacles to implementing our global action plan. We must also not underestimate the problem of ideational discrepancies or divergent priorities. There are many different angles from which to approach the issue of human influenza, depending on the stakeholder, which we first need to disentangle and, then, somehow, reconnect if we are to arrive at a plan that is truly *global* in nature and *executable* in practice. In this final part of the study, we consider these dominant perspectives on global public health - namely, developmental, human rights, security, and ecological - focusing on what each has to contribute to our understanding of the impending challenges.

Self- vs. Global Interest: A false dichotomy

We first must be ready to respond to concerns, if not outright criticism, for having selected as our focus one virus of acute, yet uncertain, epidemiological risk. An influenza pandemic *is* undeniably different from other infectious diseases for its frightening potential to overwhelm the entire international system. In the worst-case scenario, the global, regional, and national economies would grind abruptly to a halt - something that has never happened due to HIV, malaria, or TB, despite their devastating impact on individual countries in the developing world.¹⁶⁴ However, our partners in the developing world might still view it as hypocritical or self-serving that the new "global" health agenda has put a premium on those diseases that pose a threat to the North, such as Ebola, SARS, TB, and now the AI, while discounting the non-acute or non-epidemic infections like cholera or typhoid, which remain largely confined to the global South.¹⁶⁵ In a world of scarce resources in which many existing and urgent health needs remain unmet, policymakers dealing with AI will have to be ready to defend whatever priority is assigned to this unpredictable, but potentially catastrophic virus.¹⁶⁶

Thus, while working to marshal the international support needed to fight off a potential influenza pandemic, it will be necessary to strike a balance between the narrow focus on containing the spread of AI and a broad public health strategy capable of solving the public

¹⁶² Garrett (2005b): 3.

¹⁶³ WHO (2005): 45.

¹⁶⁴ Osterholm, 2.

¹⁶⁵ "Meeting Report," *The G20 Project: Infectious Diseases & Global Health* (November 2004): 7.

¹⁶⁶ WHO (2005): 3.

healthcare crisis in general.¹⁶⁷ Fortunately, though expensive and by no means straightforward, these two imperatives are mutually-reinforcing: the AI has to be tackled within a common framework of public health. We cannot afford stand-alone HIV prevention programmes, disconnected malaria care clinics, or isolated AI policies or the luxury of taking diseases on one-by-one, because others will not wait their turn. They all must come under one tent,¹⁶⁸ because not only do they share disease amplifiers, but also allow us to reap economies of scale. As already seen, building a strong public health system will automatically bolster the parallel efforts to detect, prevent, control, and treat infectious diseases, including AI. Even if partly self-interested, because it is designed to recognize and confront the global nature of the threat, an AI containment plan offers countless additional benefits that can spill over into other areas of public health intervention.

States will be more likely to cooperate if we thought of a disease-free world as a “global public health good” (GPHG). The GPHGs (which encompass health-related information, standards and regulation, policy R&D, and surveillance) are beyond the means or incentives of any single government, which makes them unattainable—short of collective action.¹⁶⁹ By definition, because they are non-rival and non-exclusive, public goods are undersupplied and underfinanced: every single one of us benefits - but would rather not have to foot the bill. We need look only as far as the tragedy of the global commons when it gets to the environmental public goods (e.g. oceans, rainforests, or the ozone-layer) to realize that we cannot afford to leave the world’s health systems up to the control of individual states. Investment in national healthcare infrastructures is an investment in our global future.

The “GPHG” is thus a good concept when contemplating the scope and complexity of the actions necessary to deal with transboundary diseases. It is far more expansive than a national interest paradigm¹⁷⁰ (it will not discount the transnational dimension of microbial globalization and threats, the need for multilateral action, or the duty to assist afflicted states) and is far more predictive (it outlines the practical obstacles, like collective action and free-riding, likely to be encountered along the way). For instance, a local farmer may choose not to participate in a disease eradication programme because of the short-term costs to his personal income, yet this may create a reservoir of the virus capable of contaminating all other animals in the area.¹⁷¹ In these circumstances, governments will have to partner with CSOs to ensure that the affected groups understand the gravity of the problem - and that they are fairly compensated for their losses.

The Human Development Paradigm: AI Action Plans with a Human Face

The growing attention to the AI outbreaks in Southeast Asia can help galvanize action, but it can also crowd out the broader public health strategies needed for long-term sustainability. Among the key questions facing the national and international public health authorities is the issue of how to launch a global influenza action plan that would simultaneously strengthen the public health infrastructures in the poor countries. Global health problems have to be tackled with a multisectoral approach in a context consistent with the MDGs, while any health plan ought to be set in motion with complementary global action plans in education, environment, water, and sanitation.¹⁷² A “human development paradigm” brings together these interconnected imperatives

¹⁶⁷ “Meeting Report,” 5.

¹⁶⁸ Garrett (2005a): 3.

¹⁶⁹ See FAO (2004): 15; Heymann and Drager, 6.

¹⁷⁰ Fidler (2004a): 2.

¹⁷¹ FAO (2004): 15.

¹⁷² Of the 8 MDGs, 3 are health goals and other 5 are crucial to health (Bradford, 1-2).

in a single policy framework, making more evident the broad systemic and institutional changes that are required to lead humanity out of the shadow of another influenza pandemic.

The Human Rights Perspective: Fundamental Liberties, Social Cohesion, and Distributive Justice

Human rights considerations, properly embedded in national legislation, and supported by monitored international agreements, can help communities maintain the delicate balance between *public* health and *individual* rights, should we ever have to face the tough questions of quarantines, isolation, civil liberties, triage, as well as restrictions on work, assembly, trade, immigration, and travel. Many countries, including Canada, have strict national containment policies for diseases like TB. As a standby precaution, the United States authorized, in April 2005, the use of quarantines for AI within the country and the isolation of international visitors suspected of carrying the AI.¹⁷³ But such actions necessarily raise difficult legal questions of personal freedoms, as we witnessed with SARS, whose rapid spread had prompted a scrupulous review of the broader constitutional framework governing infectious disease management in Canada.¹⁷⁴ Most countries have to fine-tune, if not entirely overhaul, their public health legislation to guarantee respect for fundamental human rights. Australia is currently reforming its outdated 19th-century laws, giving the state essentially unlimited powers of quarantine and inserting the right of review and appeal (which still leaves unresolved the question of national emergency powers capable of overriding the new legislation).¹⁷⁵

But we should also keep in mind that the refusal of one healthcare worker to comply with voluntary isolation measures was responsible for infecting dozens with SARS in a Toronto religious community. On the whole, draconian measures may be unavoidable; should it come to that, civil society has to be at the table to ascertain that they are transparent, lawful, and warranted. By the same token, however, CSOs also have to ensure that their members respect the voluntary or mandatory codes in the interest of public safety, be they local trade unions, faith groups, or community associations. Civil society's higher rate of popular trust imposes on it a special obligation to take community leadership on these issues.

Rather than building unity and inter-communal tolerance, a pandemic all too often leaves behind not only a trail of human casualties, but also lasting ethno-racial fissures. The risk for social cohesion is heightened any time a particular threat can be tied to a particular country or region. Canadian solidarity was already strained post-9/11 as, amid the public outpour of anger directed at a handful of terrorists and racial profiling at the airports, the Muslim and Arab community reported a rising sense of insecurity and xenophobia in the country. Given the origin of the flu, if the AI strikes, the Asian community is likely to feel the same reaction. A human rights approach might help a multinational society like Canada escape this fate by using civil liberties and equality as a way to pre-empt the perception of marginalization or ghettoization of our ethnic neighbourhoods, even if quarantines convey the opposite impression.

¹⁷³ USA, White House, *Executive Order: "Amendment to E.O. 13295 Relating to Certain Influenza Viruses and Quarantinable Communicable Diseases"* (April 1, 2005).

¹⁷⁴ They include, among others: the efficacy of existing federal and provincial legislation governing responses to communicable disease outbreaks; the legal relationships between local and provincial public health officials; the constitutionality of mandatory isolation, quarantine, and treatment orders under both federal and provincial law in light of the Canadian Charter of Rights and Freedom's guarantees for physical liberty and procedural fairness; workplace legislation and regulations as regards rights to refuse dangerous work and continuation of salary during quarantine or isolation; and the legal framework governing health information privacy under the Charter, provincial privacy and health information statutes, and other legislation governing the health sector. (See Canada, PHAC (2003) (National Advisory Committee on SARS and Public Health), "Learning from SARS: Renewal of Public Health in Canada").

¹⁷⁵ Author interviews, Geneva, 2005.

The same human rights perspective should guide the policymakers in managing the *consequences* of a pandemic, as an issue altogether separate from managing the outbreak, which calls for another contingency plan mapping out how the society would cope with the AI's legal consequences (e.g. restrictions on rights); societal arrangements and governance in a society decimated by the flu; strategic issues (e.g. access to/availability of drugs); and marginalized populations. The need for distributive justice and fairness, so frequently emphasized by civil society groups, sits squarely within this framework.

Public Health Security: The risks and benefits of securitizing health

Amidst growing concerns about bioterrorism since 9/11, a security approach has gained prominence among policymakers in the West as a leading way of perceiving public health issues. The G8 countries have already adopted the "Global Health Security Initiative" on bioterrorism. Yet securitizing health is by no means uncontroversial. Many critics fear it may divert essential resources and attention from the more critical diseases plaguing the world's poor.¹⁷⁶ Yet we have to come to grips with the reality that a pandemic influenza would be a public security threat as much as it would be a public health one. These two dimensions of international disease control, global public health and global security, should be treated as mutually-supportive: investment in the "global health security infrastructure" through capacity-building would advance and accomplish the *same* goals as a health-based framework focused on primary healthcare, while bolstering our ID emergency preparedness and response system would be an investment in any eventuality - even that of bioterrorism.¹⁷⁷ Should terrorists ever explode a biological bomb, the public health system, charged with detecting outbreaks and sounding the alarm, would be our front-line defence.¹⁷⁸

What is more, after 9/11, a security approach could command greater attention among policymakers (especially in the United States) and thus yield greater funding for prevention. We should not shrink from repackaging some of the ID monitoring and surveillance initiatives as anti-bioterrorism measures¹⁷⁹, or revamp the global health initiatives on infectious diseases to fit into a counter-bioterrorism framework - because we can do so without detracting from local health infrastructures or the capacity of the poor to provide basic health services.¹⁸⁰

In fact, we can ill afford to dismiss the security-dimension of public health. Infectious diseases pose a particularly disturbing security threat for several reasons. In the first place, there is the direct effect of human incapacitation. The outbreak of the H7N1 strain of AI in North Korea, within earshot of the US forces stationed in South Korea, directly endangered American security interests; in a number of African countries, where over 25% of some of the armed and police forces are HIV positive (and are thus especially vulnerable to the AI's lethal impact), social chaos would follow on the heels of a pandemic.¹⁸¹ The SARS crisis caused the worst political crisis for the PRC leadership since Tiananmen Square.¹⁸² Furthermore, outbreaks, even if limited in scale, are ripe with potential to cause cross-border tensions. The re-emergence of the deadly Z+ strain in

¹⁷⁶ "Meeting Report," 3.

¹⁷⁷ Fidler (2004a): 2.

¹⁷⁸ Heymann and Drager, 3.

¹⁷⁹ "Meeting Report," 3-4.

¹⁸⁰ Carin, 11.

¹⁸¹ Garrett (2005b): 8.

¹⁸² The Chinese Premier noted in a cabinet meeting, "the health and security of the people, overall state of reform, development, and stability, and China's national interest and image are at stake." But the crisis was caused less by SARS than Beijing's ill-advised attempt to withhold information from the Chinese people: "a fatal period of hesitation regarding information-sharing and action spawned anxiety, panic, and rumor-mongering [, undermining] the government's efforts to create a milder image of itself in the international arena" (cited in Osterholm, 3).

Vietnam in July 2004 upset its relations with China because - with 10 tons of live chickens smuggled daily across the poorly guarded border - Chinese smugglers selling old and sickly birds in Vietnam's markets were blamed for the outbreak, and Chinese authorities blamed for their indolence.¹⁸³ The news of the plague in India in October 1994, which caused the frantic flight of some 300,000 refugees within days, also carries salutary lessons for the national security implications of an epidemic: the Indian army was called in to enforce the quarantine; India's neighbours, Bangladesh, Nepal, and China, closed their borders to trade and travel; the Bombay stock exchange took a plunge, bringing the total economic toll to US\$1-billion in lost export and tourism revenues. The plague effectively made India an international pariah within days. What is more, the government blamed the outbreak on its Islamic rebel militias, causing much acrimony with its Islamic neighbours.¹⁸⁴ One could draw a parallel example with the BSE scare in Europe.¹⁸⁵ Security will especially be at stake where AI combines with overpopulation, environmental degradation, and resource scarcity to induce mass exoduses over state borders from poor to wealthy countries.¹⁸⁶

States will be tempted to authorize border closures or quarantines in an attempt to protect their own population. However, apart from disrupting trade, travel, and productivity, these measures do not tend to work.¹⁸⁷ Disease pathogens do not carry national passports or respect the territorial boundaries of sovereign states: sovereignty is an alien concept in the microbial world.¹⁸⁸ Once we have accepted that isolationism is not an effective public health strategy in an era of globalized epidemics,¹⁸⁹ we will be better placed to develop alternative strategies based on multilateral cooperation.

Environmental Security: Ecological Disequilibrium and Human Health

Making these policies sustainable requires far-reaching changes to human interaction with the environment. It is now clear that many of the IDs are a function of the global ecological disequilibrium. The rapid destruction of the biosphere, increased population density and migration, urbanization, climate change and flooding, economic development, overuse and misuse of antibiotics¹⁹⁰ have all increased the range of pathogen vectors fuelling rapid evolution and dissemination of micro-organisms. Global warming trends have increased the spread of insect vectors, while ozone depletion has compromised the immune system of animals and made them more vulnerable to infection.¹⁹¹ The "agricultural revolution" has been particularly damaging: large-scale water development projects, such as irrigation systems designed to increase agricultural yields, have aided the diffusion of schistosomiasis (blood flukes);¹⁹² intensification and commercialization of livestock production, higher concentration of animals in sub-optimal conditions, and the conversion of forests and wilderness into farmlands has extended the reach of infectious agents.¹⁹³ Such biological and ecological transitions are increasing the virulence of

¹⁸³ Garrett (2005b): 8.

¹⁸⁴ Price-Smith, 38.

¹⁸⁵ Ibid, 40.

¹⁸⁶ Ibid, 21.

¹⁸⁷ Garrett (2005b): 2.

¹⁸⁸ Aginam, 2.

¹⁸⁹ Ibid.

¹⁹⁰ Price-Smith, 9, 12.

¹⁹¹ Ibid, 29.

¹⁹² Ibid.

¹⁹³ FAO (2004): 38.

existing pathogens, as well as exposing humans and animals to previously contained emerging diseases.¹⁹⁴

We can no longer postpone our duty to protect the natural environment and to increase the legal responsibility for the preservation of biodiversity. Mainstreaming environmental considerations into all policy planning, and developing a common biosecurity approach across ministries and agencies,¹⁹⁵ would also automatically eliminate some of the high-risk practices in agricultural production and mindless consumption. It would also help inform the decisions of all those governments banning free-range farming (in favour of less humane in-door facilities) and ordering the killing of millions of wild waterfowl or the culling of domestic birds.

Part V: Conclusions & Recommendations

Back to Basics: “Human Security” as the Answer?

It is perhaps a dim picture of the future, but we believe that market innovation, as well as our own ingenuity and willingness to partner, can introduce some light into it. One thing is clear: avian flu will not be defeated for as long as its many **underlying causes** have not been eliminated. In the first place, we need a genuine commitment to *human development*, which implies tackling the structural and institutional sources of deprivation, disempowerment, and inequitable access to health services.¹⁹⁶ We also need a dependable *human rights system* to protect the feeble, the poor, and the marginalized during any crisis, as well as a humanized *public security framework* to awaken policymakers to security threats of ill health and structural violence. Finally, we need to take seriously our *environmental responsibilities* and change the careless ways in which we interact with, and handle the production, processing, and marketing of animals for food.¹⁹⁷ We recognize that these are long-term agendas and that the international policymakers’ time and resources are likely to be consumed by more immediate issues. Yet the two need to proceed in unison: trade, aid, financing, drug production, hygiene, dietary patterns, migratory paths of birds and humans all feed into the infectious mix of H5N1. Finding a vaccine will cut one head off the beast, but another one will grow in its place in the form of antimicrobial resistance to agricultural antibiotics or an infected pig cutlet.

We are left, in the end, with two timeframes and a series of seemingly disjointed concerns: poor countries worry about diverting attention from development issues. Different government agencies in the North prioritize either public health or security. Civil society actors tend to stress the potential human rights implications. The private sector calculates the impact of the disease in economic terms. Yet containing and, ultimately eliminating, the virus depends critically on our ability to obtain the maximum support from *all* societal actors. The “*human security*” perspective, by placing health, wealth, security, prosperity, and sustainable development all within one inclusive framework, should be the one way to bring all of these divergent perspectives together. Unlike the more traditional approaches to security, human security encompasses the more mundane questions of daily survival—hunger, disease, poverty, environmental degradation, and conflict. Most importantly, it is results-oriented: as the UNDP noted, “in the final analysis, human security is a child who did not die, a disease that did not spread, a job that was not cut, an ethnic tension that did not explode into violence, a dissident who was not silenced...human security...is a

¹⁹⁴ Ibid.

¹⁹⁵ Ibid.

¹⁹⁶ “Meeting Report,” 1.

¹⁹⁷ FAO/OIE/WHO (2005): 2.

concern with human life and dignity.”¹⁹⁸ As a common language among stakeholders - veterinarians, environmentalists, CEOs, civil servants, farmers, diplomats, military chiefs, and health practitioners - it might help mobilize support and establish a broad *consensus* on the policies and strategies needed to get our societies away from high-risk practices, where the return is not so high.

On the other hand, we also need to *take risks*, including the risk of working together on joint solution-seeking: policy to implementation. This proposal is not revolutionary, least of all in Canada: we need to restore to life the Canadian “track II” governance model that had served us so well when campaigning to ban landmines, engage the World Bank on poverty alleviation, end the trade in blood diamonds, support the Sudan peace process, halt global warming, or promote international criminal justice. In all of these examples of global regime and institution-building, the government needed - and actively sought - the support of civil society. As an illustration, a transnational coalition of over 1,000 NGOs from 60 countries, under the umbrella of the International Campaign to Ban Landmines (ICBL), and working in close partnership with a group of likeminded states, was able to negotiate a comprehensive ban on antipersonnel mines—in just 14 months. What came to be known as the “Ottawa Process” highlighted several innovative ingredients of successful advocacy and governance processes relevant to our discussion. First, partnership delivers - if both governments and NGOs can overcome their mutual apprehensions about teamwork.¹⁹⁹ “Two-track diplomacy” allowed a genuine partnership between states and NGOs, both of which participated in the development of the Convention. Second, even smaller powers, united in a coalition of the likeminded, and acting jointly with global civil society, can seize the moral leadership and overwhelm big-power opposition. Finally, negotiations took place outside normal diplomatic channels in order to place the AP-mines on a “diplomatic fast-track to extinction.”²⁰⁰ Traditional mechanisms work as long as states are willing to move as fast as the slowest in the pack, but they can, and should, be bypassed where they stand in the way of urgent action.²⁰¹ “Ad hoc multilateralism” or coalitions of the likeminded may be preferable in crisis situations. Nevertheless, Canada’s “new multilateralism” should fit within the UN matrix and not act as a substitute for it; should put the burning issues on the agenda and move the consensus forward, but without detracting from the inclusiveness and universality of the UN’s framework. The AI emergency warrants the Track-II human security model every bit as much as landmines or climate-change did. It also justifies governments reaching out to their civil society partners for help, expertise, guidance, legitimization, delivery capabilities, and support. CSOs, for their part, are under obligation to provide capacity, directions, and solutions, as well as to raise red flags when necessary.

Civil Society Organizations have been very effective where their capacity allows research to offer evidence-based policy advice and knowledge transfer. The skills and credibility of implement broad public education and outreach can enhance good outcomes of otherwise less credible ‘official’ sources of information.

And if the avian influenza never comes - will we have been in a flap over nothing? Clearly not: today, we are not prepared to face *any* virulent, bio-terrorist, or cataclysmic enemy. The approach we have put forward in this paper is an integrated, law-based, human security strategy, designed not only to bolster our defences against this specific fearsome virus, but also to build system resilience: true emergency preparedness. Forging partnerships and increasing fairness, equity, and transparency in general, beyond the immediate time horizons, will also leave us better

¹⁹⁸ UNDP, *Human Development Report 1994*.

¹⁹⁹ Maxwell Cameron, “The Landmine Ban: Globalization of Civil Society?” *Review* 2/1 (1998).

²⁰⁰ *Ibid.*

²⁰¹ *Ibid.*

equipped to repel other threats. The global perspective will also encourage instant redistribution of resources envisaged in the MDGs by channelling scarce supplies to those in greatest need first. This will be a good investment, whatever the future brings. It will never be possible to create a disease-free world.²⁰² When the big epidemic comes, however, we will be more likely to be ready.

The coming conflict will not be fought out between the military forces of sovereign nations competing over a defined piece of soil or ideology. The battlefield will be global in scale, leaving no sanctuaries, no places on earth to hide. Standing on the one side will be the whole of humanity; on the other, an invisible, faceless, and stealthy enemy. It can hide in a backyard duck, a pig, a chicken, a neighbour, a family member. What army can defeat an enemy that we can see only under a microscope?

The answer is an army of many recruits, including civil society partners with governments and others -- not conscripted but united in a common 'ready position' with clear and shared values, with enlightenment overriding – for this battle – self-interest in the Keynesian economic model.

Researcher, Laurie Garrett noted that “The new globalization pushed communities against one another, opening old wounds and historic hatreds, often with genocidal results. It would be up to public health to find ways to bridge the hatreds, bringing the world toward a sense of singular community in which the health of each one member rises or falls with the health of all others.”²⁰³ These potential effects are already becoming evident: Israeli and Jordanian veterinary services officials announced recently that they would meet at the border between the two countries to work together on a plan to combat bird flu. The option is the risks to all countries of social disintegration and the kind of racial profiling which took place in multicultural countries like Canada during the SARS epidemic and post 9/11. United against an invisible enemy, surely we stand.

²⁰² Garrett (2005a): 4.

²⁰³ Ibid, *Betrayal of Trust: The Collapse of Global Public Health* (2000).