Governments in various jurisdictions around the world are responding to fears of Avian Influenza (AI, or bird flu) by destroying backyard flocks and making indoor confinement of poultry mandatory. In Canada, Quebec outlawed the outdoor raising of poultry as of November 12, 2005. The theory behind these measures is that avian flu is carried by wild birds, which can pass it to domestic birds that are outdoors, which could then infect intensive poultry farms and the people who work there.

Outdoor poultry caught in the crossfire
Forced confinement threatens the livelihood and food security of small scale farmers and poor families in countries affected by AI – and by the fear of it. Confinement also threatens certified organic poultry operations, grass-fed pastured poultry and free range egg production – all of which are increasingly popular with consumers as people become more aware of health, animal welfare, labour and environmental issues around factory farming.

Prevention of a world-wide flu pandemic that could kill millions is certainly a worthy cause. The question is – will outlawing outdoor poultry production save us from an AI pandemic? Or will it actually increase the risk of the disease?

The rationale for forced confinement measures is the need to separate the flu virus from the commercially raised birds. Quebec now requires all farmers not only to keep poultry indoors, but to ensure the building is tight enough to prevent wild birds from getting in. Only one species and one age group of birds is allowed on the farm at a time, and surface water must not be used as drinking water for the birds. Yet the Canadian Cooperative Wildlife Health Centre survey of wild birds has found no incidence of Highly Pathogenic Avian Influenza (HPAI) in Canada, and only a few cases of the common North American low pathogenic form of the disease, which is not considered a threat.

Clearly, confining birds in North America at this time has nothing to do with protection of human health.

AI spread along trade routes, not migratory routes
In Europe and Asia the highly pathogenic strain of AI has been discovered in wild birds. Are they the source of the flu? Or are they victims? According to BirdLife International, a global partnership of non-governmental conservation organizations, “… if wild birds had been spreading the disease across continents there would have been trails of dead birds following migration routes, which isn’t the case. The “wild bird” theory for the spread of H5N1 provides no explanation as to why certain countries on flight paths of birds from Asia remain flu-free, whilst their neighbours suffer repeated infections, nor of why only a single strain of H5N1 is found in outbreaks west of China.”

AI source factory farms, not wild birds
There is growing evidence that HPAI originates in the factory farm system and is then spread through commercial pathways, not migratory flyways.

In a low-density, dispersed population, such as flocks of wild birds or backyard chickens, a virus can only survive as a low pathogenic agent. If a virus happens to mutate into a highly pathogenic form in these circumstances, it quickly dies out, as it kills all available hosts.

However in a factory farm situation, perfect conditions exist for a virus to mutate from a low pathogenic to a high pathogenic form. Thousands of hosts (chickens) with near identical genetic makeup, all the same age and size, crowded in close conditions, allow a virus to kill its host, and move onto the next victim with great speed and ease. The HPAI virus depends on the factory farm system to continue supplying it with new hosts through the vertically integrated industrial poultry operations, linked to each other via the global trade in live birds, eggs and virus-contaminated feed and manure.

There is also a strong correlation between exposure to factory farms and incidence of HPAI. In Thailand, China and Vietnam there is a highly developed industrial poultry industry which has expanded dramatically in the past decade. The large poultry companies raise millions of birds, hatch chicks to supply other intensive poultry operations, export live birds and eggs to countries such as Nigeria (where the first HPAI outbreak in Africa was recently reported) and produce and export feed which often includes “litter” (ie manure) in the ingredients. Manure that may contain live virus is spread on surrounding farmland, or exported as fertilizer, and through run-off may end up in surface waters where wild birds feed and rest. Chicken manure is even found in fish farm feed formulations where it is introduced directly into the aquatic environment.

Wild birds and poultry that have fallen victim to HPAI in Asia, Turkey and Nigeria appear to have been directly exposed to HPAI virus originating in the factory farm system. In Asia, a flock of wild ducks died from HPAI – after having come into contact with the disease at a...
Safe food, poultry gene pool, food security at risk
The danger of a 1918-style world-wide human pandemic due to AI mixing with a human flu virus may well be overstated. We have better social conditions and medical knowledge now compared to what existed in the aftermath of World War 1. However, if there is a risk of a serious disease epidemic, it will victimize the weakest and most vulnerable people. We have a collective responsibility to prevent such catastrophe. However a wide-spread mandatory shift to industrialized poultry production via forced confinement of birds combined with massive culls of genetically diverse, dispersed backyard flocks is exactly the wrong response. Mandatory poultry confinement increases the risk of HPAI outbreaks, making us more vulnerable to future disease problems.

Solution to pandemic risk is strict control of factory farms
The way to reduce the risk of a human pandemic is to strictly control intensive poultry operations and thus protect wild bird populations and outdoor poultry production from exposure to HPAI. At the same time, a separate infrastructure to promote a genetically diverse, dispersed, low-density poultry production sector to serve local consumers should be supported.

Recommendations:
✓ Ban use of industrial poultry litter in domestic and imported animal feed.
✓ Enact and enforce strict regulations on industrial poultry manure, including records to allow tracing of any disease outbreak to manure source.
✓ Enact and enforce strict regulations on international trade in live poultry and eggs.
✓ End subsidies and regulatory measures designed to increase industrialisation of poultry production.
✓ Vaccinate (instead of cull) backyard poultry within certain radius of HPAI outbreaks.
✓ Keep a database and map of HPAI affected poultry facilities including ownership, subsidiaries and trading partners, location, virus info (what sub-type), operational practices and customers.

Footnotes
Avian Influenza: Virus Background (Wild Birds) – Canadian Food Inspection Agency
3 Reality takes wing over bird flu - Leon Bennun, BirdLife International http://news.bbc.co.uk/1/hi/sci/tech/4721598.stm
4 Paul Ewald: Infectious Disease and the Evolution of Virulence – Excerpt from PBS interview with Dr. Paul Ewald http://www.pbs.org/wgbh/evolution/library/01/6/016_06.html
6 Foul Play: the Poultry Industry's Central Role in the Bird Flu Crisis - GRAIN http://www.grain.org/
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