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Contesting Urban Agriculture

The Politics of Meat Production in the License-Buy-Back Scheme (2006-2007) in Hong Kong

Kin Wing Chan

Rarely do people associate pig farming with the cityscape of Hong Kong. Hong Kong, however, has a long history of agricultural development since the British ruled the area after the First Opium War in 1842. Controlling the food supply was a crucial political maneuver for the British government to safeguard the colony's stability and security. During the British rule, farming subsidies, technological extension services, and animal donations became the governing tactics to boost the production of vegetables, fisheries, and pigs (Chan, 2011). In 1978, China implemented an open-door policy and negotiated with the British government to export fresh food to Hong Kong. Since then, Hong Kong has depended heavily on Chinese imports of fresh vegetables, fish, and pork. This led to a dramatic decline in local food production. Recently, the desire to consume local products has increased because the public is concerned about food safety issues in China, ranging from milk powder contaminated with melamine, to recycled oil, and toxic chemical usage in the food production system. The rise and decline of agricultural activities in Hong Kong provides an opportunity to evaluate the conflicts over urban agriculture in specific time and space. There is a paucity of studies to examine why a higher value is assigned to certain forms of urban agriculture over others.¹ For instance, urban vegetable farming presents a more positive aesthetic image; urban pig farming differs from other types of agriculture because of associated sanitary risks, the need for manure management, and odor issues. This study employs a political ecology perspective informed by animal geographies to examine how the meat politics in the License-Buy-Back Scheme (LBBS) has become a tactic to reduce and control the pig farming industry in Hong Kong.

In order to eradicate the transmission of pig-to-human diseases and sanitary risks, governing institutions introduced the LBBS to discipline and regulate pig farming practices in 2006. A new system of sanitary norms and normative behaviors were produced to regulate farm spaces and farmers. The articulations of farm management, record system, standardization, and animal waste treatment knowledge became the tactics to transform pig farm spaces and produce normative sanitary pig farming behaviours. The LBBS was portrayed in a government document as a program voluntarily adopted by pig farmers. This chapter argues that the sanitary discourse created a cloak to disguise the intervention of the governing institutions and produced a marginalized pig-raising environment to force farmers to relinquish their licenses. The concept of voluntarily surrendering pig farmers' licenses should be critically revisited.

To understand better the politics of the LBBS, an archival investigation was conducted during 2009–2012 to understand the social and biophysical factors which tend to restrict the pig farming industry. To engage with pig farmers in this research, the author interviewed 19 pig farmers (out of 43 operating pig farms) to understand their perceptions on the LBBS, and conducted ethnographical studies of two pig farms to triangulate archival documents with farmers' daily practices (Shrum, 2004). This chapter begins by introducing the concept of political ecology and discusses the rationale for the governing institutions to implement the LBBS. Then the paper turns to illustrate the disciplinary techniques and political tactics in LBBS, highlighting how different stakeholders perceive these techniques. Finally, this chapter concludes by highlighting how the sanitary discourse constructs the pig farming industry as problematic and naturalizes the intervention of the governing institutions.

Political ecology and animal studies

Political ecology brings politics into consideration to understand society and environment interactions. According to Blaikie and Brookfield (1987, p17), political ecology concerns both ecology and political economy. The term 'political ecology' was first coined by anthropologist Eric Wolf in a research

article titled *Ownership and Political Ecology* (Watts, 2003). Piers Blaikie's oeuvre further contributed to this field in three major ways. It:

- 1 integrated political economy perspectives in environmental science (Robbins and Bishop, 2008);
- 2 bridged the structuralist and post-structuralist debates with material ecologies, reflexivity, and network synthesis (Grove, 2009); and
- 3 adopted a multidisciplinary approach to address local knowledge and practical alternatives to the developmental issues (Simon, 2008).

Paulson et al. (2003) and Robbins (2004) provide succinct reviews of the intellectual genealogies of political ecology. The mid-twentieth century scholars, theorizing on political ecology, diverged from environmental and cultural determinism, which claimed that climatic factors influenced civilizations. The determinists' approach naturalized the domination of the powerful group and justified the process of colonization. By assuming inevitability, the practice of colonialism comes to appear apolitical (Robbins, 2004, p19). Combining political economy approaches with ecological studies opened up opportunities for research on opaque actors such as farmers and yielded more research on colonial and post-colonial systems, power and discourses, environmental justice, global and regional governance as well as the marginal groups in developing countries (Byrant and Bailey, 1997; Fairhead and Leach, 1995; Robbins and Sharp, 2003; Scott 1985; Swyngedouw, 2008). Concerning the themes of political ecology from geographical perspectives, Zimmerer and Bassett (2003) elucidate the understanding of social-environment interactions and production of scale. Yet, Bryant and Bailey (1997, p30) argue that the goals of political ecology in geography are to examine 'marginality, vulnerability, and risk' of the marginalized groups in everyday and episodic bases.

Recent debates on political ecology emphasize four major aspects:

- 1 the social construction of scale and reproduction of scale from below (Bulkeley, 2005; Nelsen and Simonsen, 2003);
- 2 the call to combine both structuralist and post-structuralist perspectives in order to examine the biophysical and bio-economical changes in rural-

urban, industrial, and global north and south settings (Swyngedouw and Heynen, 2003; Zimmerer and Bassett, 2003);

3 the discussion of gender and the household's power relationships in multiple scales (Paulson and Gezon, 2004); and

4 the engagement of traditional sciences, material ecologies, and complexity theories to look for practical solutions and ponder alternatives (Rocheleau, 2008).

The scope of political ecology not only addresses different levels of politics on vulnerable biophysical environment but also engages with science and social science to ponder alternatives to development paths for vulnerable groups. However, few political ecology studies address why certain forms of agriculture are viewed more positively than others. Particularly, why is pig farming less desirable than other types of urban agriculture?

Integrating animal geographies with the political ecology literature helps to answer the above questions two major ways: (1) it examines how 'the animal problematizes the power relationship' between governing institutions and farmers (Neo 2012, p951); and (2) it questions human-pig relationships and use of spatial tactics to control animal-human transmitted diseases (Emel and Urbanik, 2010; Enticott, 2008). Animal studies provide insightful angles to understand how humans perceive pigs in different spatial and temporal settings. Serpell (2004) argues that affection and utility determined human's perceptions toward pigs. Holloway and Morris (2013) explain that aesthetic evaluations and judgments transform human perceptions on pigs. For instance, humans evaluate pig odors and wastes as social nuisances (Vukina et al., 1996). In fact, images of pigs are constructed discursively to inform societal norms of urbanity, determining whether pigs are in place or out of place in the city (Creswell, 1996). For example, Cronon (1992, p228) depicts how the city of Cincinnati in the nineteenth century constructed itself as the 'Porkopolis' because millions of pigs provided huge economic value. However, the Smithfield Meat Market in London was vilified because urban imagination of pigs in the city of London evolved to consider them unsanitary and filthy, leading to their removal in 1852 (Dodd, 1856). To illustrate how the perceptions of pigs changed over time and space, Stibbe (2003) examines the

use of the word 'pig' in the British National Corpus and points out that presuppositions concerning pigs became constructed negatively, especially, during the outbreaks of animal-human transmitted diseases such as H1N1, foot and mouth disease, and avian flu (Convery et al., 2005; Davis, 2006; Perdue and Swayne, 2005). Pigs were perceived as the hosts of pathogens, which led governing institutions to develop a set of practices to increase biosecurity measures (Donaldson, 2008; Law and Miele, 2011). The above studies provide insightful direction to consider how the pig farming industry can become less desirable than other types of urban agriculture under the gaze of the stakeholders and governing institutions.

The context of the meat politics in the LBBS (2006–2007)

The rationale for implementing the License-Buy-Back Scheme (LBBS) was to reduce the 'risk of avian influenza outbreaks' because with 'rapid urbanization of the New Territories, pig farming has brought about public health and pollution concerns' (LCFC, 2006 p2). Pigs became a host for spreading the pathogenic H5N1, H1N1, Japanese encephalitis, and *Streptococcus suis* (Auewarakul, 2004; Menon, 2011). Both human and nonhuman actors, who came into contact with pigs, became possible carriers of these pathogens. This sanitary consideration drove governing institutions to control the whole pig farming industry in Hong Kong including pig farmers, workers, retailers, and live pig transporters.

After the 9/11 terrorist attacks, biosecurity became a major concern of numerous countries (Smart and Smart, 2008). Different levels of politics and governance were shaping the production, distribution, and consumption of livestock products from global organizations (e.g. the Food and Agriculture Organization (FAO), the World Organization for Animal Health (OIE), and the World Health Organization (WHO) to local government departments (e.g., the Food and Environmental Hygiene Department, the Health Department, and the Center for Health Protection Services). Hong Kong's economy was hit hard by severe acute respiratory syndrome (SARS) in 2003; the gross domestic product (GDP) of Hong Kong decreased by 3.7 percent in one quarter and the government reminded the public to 'never forget the painful lesson from SARS' (41st Livestock Subcommittee Meeting, 2005, p6). To control the spread of

pig-to-human diseases at the local level, governing institutions produced new norms of sanitary practices on the territory, street, farm, and personal levels.²

The need for biosecurity reproduced the production relationships among governing institutions such as the Agricultural, Fisheries and Conservation Department (AFCD), Food and Environmental Hygiene Department (FEHD), Legislative Council Financial Committee (LCFC) and pig farmers. Pig-to-human disease transmission became a problem for governing institutions, which had to consider the whole live pig industry (pig farmers, workers, retailers, and live pig transporters) in their political agendas. The *prima facie* reasons of the governing institutions for buying back the whole industry's licenses were:

- 1 pig-raising was perceived high sanitary and public health risks (AFCD Livestock Subcommittee, 2005);
- 2 pig farms became identified as mosquito breeding grounds (LCFC, 2006);
and
- 3 reducing pig-human contact was deemed essential (FAO and WOA, 2005).

In 2005, the governing institutions aimed to eradicate the whole industry by providing nine million Hong Kong dollars to attract operators, retailers, wholesalers, and transporters to return their licenses to the government. As a result, 222 out of 265 pig farmers gave up their licenses and ceased their operations. This study argues that the LBBS was depoliticized and neutralized by rhetorically emphasizing the pig farmers' willingness. The Legislative Council Finance Committee documented a debatable statement, that:

the proposal to buy back pig farming licenses *was first raised by local pig farmers* ... [the] Health, Welfare and Food Bureau received over 190 written submissions, representing nearly half of all pig farms, *urging the early launch of the voluntary surrender scheme*. [Emphasis added.]

(LCFC, 2006, p9)

By arguing that pig farming created potential threats and risks to Hong Kong, the governing institutions could technically claim a neutral position by disguising the underlying political agenda as a conflict between the general public and pig farmers. The sanitary argument was highlighted when it was

discovered that pigs were a host for the SARS virus. According to a survey undertaken by the Legislative Council, the public weighed health and safety concerns over the livelihoods of farmers and livestock, and the pig farming industry itself. The survey was anthropocentric³ and did not consider animal ethics or human-pig relationships. Launching the LBBS was purportedly to reduce pig-to-human transmitted disease; however, the underlying reason to implement the LBBS was to lessen the political risk and reduce sanitary risks that hampered tertiary industry growth. For instance, the mishandling of SARS patients, the unnecessary delay of warnings, and bureaucratic inertia created extensive social discontent. On July 1, 2003, 500,000 Hong Kong citizens demonstrated to express their frustrations and distrust toward the government's enactment of security bills, mismanagement of the SARS crisis, and economic depression. Finally, the chief executive *Tung Chee-Hwa* was forced to resign. This political lesson illustrated that public health crises played a role in triggering political crises.

In addition, the conclusion of the report titled *Ex-Gratia Payments to Pig Farmers* highlighted the 'urgency' of buying back pig farmers' licenses so that the purchases could be made 'before the high risk summer season of Japanese encephalitis (JE) outbreak' (LCFC, 2006, p9). Two major reasons were given: (1) pig farms accumulate stagnant water and produce a breeding ground for mosquitoes; (2) the pig is one of the transmission hosts of JE. However, the Finance Committee rhetorically exaggerated the severity of JE although there were no supporting data to show the number of reported cases of infections from pig farmers, workers, retailers, and live pig transporters. Interestingly, the *Hong Kong Medical Journal* noted that the reported cases of JE in Hong Kong from 1967 to 2004 were sporadic. According to this report, 'Hong Kong sees only a few sporadic cases of JE, thus it is unwise and perhaps not necessary to advocate a universal vaccination programme' (Lam et al. 2005, p186). Furthermore, between 1967 and 2003, of the 45 cases of JE reported (including local and imported cases) only two cases were reported by the residents within 2.6 km of the abattoirs and pig farms, and 'in the remaining cases neither abattoirs nor pigsties existed nearby' (ibid., p185). The report makes four important points:

- 1 pigsties were not necessarily the breeding ground of JE;
- 2 according to the report, there was no reported case about the infections from pig farmers and live pork retailers and wholesalers (ibid.);
- 3 the medical doctors didn't argue that infected cases were directly related to pig farms or abattoirs areas. Their findings did not absolutely accuse pig farms as the breeding grounds of JE;
- 4 apart from pigs, domestic or wild animals were also a potential host of JE (ibid.).

Additionally, the medical doctors in this paper suggested providing a vaccination of the pigs as an effective way to solve the problem.

The pig farming industry in Hong Kong has been shrinking over the last few years, so vaccination of a small and diminishing pig population may be the most efficacious, sustainable, and cost-effective measure to prevent the spread of JE (ibid., p186).

Based on the mentioned arguments, JE became an imaginary enemy for the governing institutions. The government produced different sanitary monitoring schemes to discipline pig farmers, to depoliticize the License-Buy-Back Scheme and to mystify how the governing institution made a very tough environment for pig farmers to survive.

The LBBS (2006–2007)

In 2005, the Hong Kong Legislative Council's Finance Committee accepted the ex-gratia payment through the License-Buy-Back Scheme (LBBS) to buy back the pig farmers, retailers, and transport workers' licenses to operate. According to the Legislative Council Finance Committee (LCFC), there were three major reasons to buy back the whole industry licenses.

First, pig farming caused a serious pollution problem. The justification of the Finance Committee's actions was linked to the quantity of the pig excrement: in 2006, there were 265 farms raising about 330,000 pigs which generated 520 metric tons of excrement each day (LCFC, 2006, p2). But, if pig farmers participated in the Livestock Waste Control Scheme (1987–1997), they had to install pig waste treatment facilities and treat pig waste prior to discharging it into rivers. The amount of pig excrement was only a number used by the

governing institutions to illustrate the impacts of pig waste. If the governing institutions wanted to accuse pig farmers of indiscriminately discharging pig waste, they should have provided the number of prosecutions and amount of indiscriminately discharged pig waste instead of merely relating that '330,000 pigs generated 520 metric tons of excrement each day' (ibid.). This statement accentuated the a priori linkages between number of pigs and direct impacts of excrement but ignored the fact that the majority of pig farmers had properly treated the pig waste.

Second, pig raising was argued to be unsuitable for Hong Kong because it caused public health problems.

With the rapid urbanization of Hong Kong, particularly in the New Territories (N.T.), sustainable pig farming in Hong Kong is no longer a realistic long-term policy option in view of the public health and pollution problems arising from it. The Administration should therefore freeze the number of pig farms, by stopping the issue of new pig farm licenses and freezing the current rearing capacity to restrict the number of pigs in Hong Kong.

(LCFC, 2006, p2)

Owing to the urbanization process in the New Territories (NT), pig farming became a sanitary and pollution problem. To reduce the risk to public health, the governing institutions decided to restrict the number of pig farms, stop issuing new pig farm licenses, and freeze the pig raising capacity as a means to control the pig farming industry.

Third, the urgency to eradicate the hosts of Japanese encephalitis and *Streptococcus suis* was cited as a reason to buy back licenses. These diseases create serious threats for the people in Hong Kong. An Agriculture, Fisheries and Conservation Department veterinarian said that the reason to implement the LBBS was to remove the health risk posed by pigs, which are hosts for the pathogen *Streptococcus suis* because it can cause serious illnesses. The bacterium can enter the human body through skin wounds. In order to prevent infection, people should avoid contact with pigs (48th Livestock Subcommittee minutes, 2007). As aforementioned, Japanese encephalitis can be spread through pigs; eradicating pig-related businesses became a major tool for controlling the spread of Japanese Encephalitis and *Streptococcus suis* in Hong Kong.

The above reasons provide opportunities and justifications for the governing institutions to buy back the whole industry's licenses and tighten the pig farms' regulations. Those human and non-human actors⁴ who interact with pigs came to be regarded as problematic as well. The 'curse' of pigs is diffused from their problematic body to pig farms, live pig handling vehicles, and abattoirs. Pig farm workers, live pig retailers, and transporters became problematic bodies themselves as their bodies assist virus transmission. Under the gaze of the governing institutions, the pig farming network had become a series of problematic spaces and moving bodies. These problematic spaces were targeted for eradication through the two major governing technologies by: (1) using ex-gratia payments to buy back the industry's licenses and (2) proposing the Codes of Practices to further regulate the pig farming spaces.

Ex-gratia payment⁵

In 2004, the Health, Welfare and Food Bureau in Hong Kong proposed the ex-gratia payment for live pig farmers, workers, retailers, and transporters. Meanwhile, the Agriculture, Fisheries and Conservation Department proposed the new Codes of Practices for the pig farmers. In fact, these two new policies are complementary: either an ex-gratia payment or stringent control is appropriate for pig farmers. The Health, Welfare and Food Bureau drafted a proposal:

The Government should *tighten up the existing livestock licensing regulatory regime* by ensuring strict compliance with the licensing conditions. Under the circumstances, it is considered appropriate that a *voluntary surrender scheme* for pig farmers should be introduced for those who do not wish to continue to operate under an increasingly stringent regulatory regime. [Emphasis added.]

(LCFC, 2006, p3)

From the above statement, the meaning of 'voluntary surrender' was contradictory. First, the governing institutions only provided two choices and did not consult⁶ with the pig farming industry beforehand. Second, the governing institutions increased stringent controls on pig farming, creating lots of stress, fear, and unsettling feelings among farmers (Tao, 2008). Pig farmers were involuntarily presented with a turbulent business environment; the only realistic option was to give up their licenses in return for financial

compensation. Finally, it caused 222 pig farmers to give up their licenses and only 43 farms still continue pig farming (See table 17.1).

Table 17.1 Change in the Pig Farming Industry after 2006 LBBS

Indicator	2006 - 2007	2007 -2008
Pig farms	265	43
Number of licenses bought back	171	222 (accumulative total)
Number of local live pigs	426,000	75,000

Source: The data is summarized from the Agriculture Fisheries, and Conservation Department (AFCD), Livestock Subcommittee minutes (48th AFCD Livestock Subcommittee Meeting, September 2007; 49th meeting, January 2008; minutes, 50th meeting, February 2008).

To reduce the chance of human-pig contact, the governing institutions not only removed pig farm space, but also reduced the number of live pig workers, retailers, and transporters. The governing institutions aimed at providing ex-gratia payments for 800 workers and offered loans to 130 live pig transporters to convert their vehicles into frozen meat carriers.

To assist those local workers of the live pig farming/transport industry who become unemployed as a result of their employers ceasing operation under the proposed voluntary surrender scheme, we propose to provide a one-off grant of \$18,000 to each worker ... the livelihood of the live pig transporters whose sole business is to transport live pigs from local farms to slaughterhouses ... to assist these live pig transporters, we propose to provide an unsecured loan of up to \$50,000 per vehicle for them to upgrade/convert their vehicles for conveying chilled/frozen products or for other business operations.

(LCFC, 2006, p3)

The fates of local workers and live pig transporters were similar to pig farmers, since they were a derivative industry dependent on live pig supply from local pig farms. Buying back pig farmers' licenses affected the jobs of local workers and live pig transporters because the live pig businesses were shrinking. Local workers and live pig transporters might become unemployed or have to convert to other business operations. Surrendering their live pig handling rights and accepting ex-gratia payments were the plausible options for them.

Codes of practices – spatial controls on remaining 43 pig farms

In 2007, the AFCD announced the Codes of Practices in order to further monitor and regulate the remaining 43 pig farms. The experts from the Centre for Health Protection (CHP), Department of Health, in Hong Kong worried that these pig farms created health risks because of their proximity to 'human habitation' (Alberta Government – H.K. office, 2007). In 2007, the Food and Health Bureau, Environment Bureau (FHBE) and Agriculture, Fisheries and Conservation Department (AFCD) proposed 43 codes to local pig farmers. The Codes of Practices was designed to remove Japanese encephalitis, increase farm efficiency, and improve the quality of live pig supply in Hong Kong. Here is the quote from the Legislative Council:

The emergence of Japanese encephalitis in recent years which is endemic among pigs, has also drawn public attention to the management and hygiene of local pig farms ...The Code of Practice (COP) aims at enhancing management efficiency of pig farms and reducing the risk of disease outbreaks, so as to ensure a more stable supply of fresh pork with better quality assurance. The health of farm workers and people on farm can also be better safeguarded.

(Legislative Council 2008b, p1)

The governing institutions aimed to produce new rules and regulations to imbue pig farmers with new standards and practices as a means to reduce public health risks. These 43 rules were proposed to be incorporated into the Livestock Keeping License. These rules monitor five major pig-raising practices, including husbandry and farm management; movement control; disease monitoring and control; and waste management and hygiene. The marking scheme⁷ identifies 43 prohibited pig-farming practices; they are grouped under categories 1, 2, 3. Category 1 includes minor misdeeds causing minor sanitary and hygienic threats. Items in category 2 are more serious and cause medium threats, while category 3 includes serious threats, which will cause the Director of AFCD to revoke a pig farmer's license immediately. In fact, the Codes of Practices impose more regulations and controls on pig farmers and imbue the new concept of sanitary management (See Table 17.2).

Table 17.2 Proposed Codes of Practices to be imposed on pig farmers

Descriptions	Codes of Practices	Governing institution's explanations
(1) Spatial control and sanitary management of pig farms	Rule 1	There is clear delineation of boundary. The licensee must declare the boundaries, quarantine facilities, isolation facilities, production areas and non-production areas of his/her farm on a map that precisely indicates the geographic location of the farm structures (AFCD LS 1/08, Annex, 2008, p1).
(2) Construction of normative pest control behavior in pig farm space	Rule 7	Licensee shall incorporate an active, effective rodent, pest and mosquito control system into management practice ... eliminate all accumulation of stagnant water in the farm, trim the vegetation, and clear the surface channels and sand traps especially during the time of the year when there is aggregation of migratory birds. The updated operation protocol for the aforesaid system shall be submitted to this Department (AFCD LS 1/08, Annex, 2008, p1).
(3) Normative waste treatment and hygiene practices in pig farm space	Rule 39	No discharge of liquid livestock waste shall bypass the waste treatment system, the Sampling Point or the Discharge Point unless it is unavoidable to prevent loss of life, personal injury or severe property damage or no feasible alternative exist. Any pipe works that can be used for bypass discharge of liquid livestock waste, no matter permanently installed or temporarily connected, are prohibited (AFCD LS 1/08, Annex, 2008, p7).

Source: The Agricultural, Fisheries, and Conservation Department (2008).

The Codes of Practices - File No: LS 1/08 Annex: 1–16.

Rule 1 required pig farmers to draw out the production and non-production boundaries on their farms. Within each bounded area, there are different sets of values, norms, and orders appropriate for the normative farming practices. For instance, the visibilities of the painted lines between the production and non-production zones remind farmers that they have different practices in handling pig and waste treatment. The new spatial order enhances separation and control of pigs because boundaries delineate appropriate behaviors and confine normative practices. Boundary delineation, knowledge of hygiene, farm management, and biosecurity are articulated in the new spatial order.

Rule 7 is a self-regulating rule, which monitors farmers' work. Farmers must supervise themselves in the removal of rodents, pests, and mosquitoes that can become the host to spread diseases. Since the pig is seen as the host of Japanese encephalitis, regulating farmers to remove static standing water and cut down weeds are the ways to reduce the threats of Japanese encephalitis. Farmer representatives commented that rarely 'can pig farms eliminate rodents because the storage of fodder crops attracts them' (The AFCD LS 1/08, Annex 2008, p1). If the governing institutions would like to reduce the rodent problems on pig farms, they should provide more financial and technological assistance to pig farmers.

Rule 39 (including rules 31 and 33) requires the provision of precise waste treatment floor plans and waste treatment records. Precise waste treatment procedures are produced to promote standardized sanitization behavior, self-regulation, and surveillance. This facilitates the monitoring agencies' waste sampling and the farmers' adherence to norms. Regarding farmers' perceptions on this normative waste treatment practice, pig farmers strongly disagree with these rules for three major reasons:

- 1 it is not necessary for farmers to resubmit another farm plan because the AFCD already has the farmers' farm plans;
- 2 it is nonsensical to put signs or notices to indicate the discharge outlets in a private farm space;
- 3 it is difficult to remove obstacles such as grass nearby the discharge outlets (47th Livestock Subcommittee, 2007, p3).

Pig farmers who break rule 39 will have their licenses revoked by the AFCD directors if they are found to be directly discharging animal wastes into the river, due to the high risk to public health. This is a direct command to inform farmers that they must follow the uniform rules and regulations. This command develops a new conception of order to confine waste management in designated farm premises with appropriate hygienic norms. Pig farmers fiercely object for two major reasons: (1) current environmental ordinances provide adequate legal power for the monitoring agencies to penalize offending farmers; farmers argue that the ulterior intention of this rule is to

force pig farmers to surrender their licenses; (2) pig farmers argue that revoking their licenses is directly meant to estrange their businesses and create extensive economic hardship to their entire family. In this situation, farmers would choose prison confinement over revocation of their licenses (Livestock Subcommittee 50th meeting 2008, pp2–3).

In short, the Codes of Practices imbue the new knowledge of precision, sanitization, farm management, biosecurity monitoring, and surveillance of farmers' waste treatment practices. New spatial order and normative practices are produced through boundary delimitation and animal quarantine. A system of hygienic and sanitary rules transform pig farming space into a hygienic and sanitary space. In this new spatial order, farmers are expected to have appropriate waste treatment behaviors and normative sanitary practices. The author argues that the Code of Practices will further strangle the pig farming industry and force farmers to give up their licenses.

Perceptions of crucial players in the Hong Kong pig farming industry

In the following section, the perceptions of the Deputy Director and veterinarians of the Agriculture, Fisheries and Conservation Department, legislative council members, and the general public of the License-Buy-Back Scheme will be presented.

The perceptions of deputy director and veterinarians of the AFCD

The AFCD perceived the License Buy Back Scheme as an 'emergency exit for pig farmers' because there is no possibility for long-term development of pig farming in Hong Kong and the control will be tightened and strengthened (author's translation from the representative of the AFCD in the 52th Livestock Subcommittee, 2008). The attitudes of the AFCD on Hong Kong pig farming are pessimistic and negative for four reasons:

- 1 pig farming causes serious sanitary and pollution problems especially regarding the threats of pig-to-human disease transmissions;
- 2 the urbanization process increases the proximity of human habitation and pig farms, which presents a public health risk;

- 3 the impossibility of relocating all livestock and pig farming to one special farming zone involves adding a huge financial cost of buying land; and
- 4 Hong Kong doesn't have sufficient land for long-term development of the pig farming industry.

The perceptions of the Legislative Council members

In the Legislative Council discussions of the ex-gratia payment and codes of practices for the pig farming industry, most of the legislative council members supported the LBBS and the Codes of Practices for five reasons:

- 1 reducing public health and environmental problems (e.g. the 520 metric tons of pig excrement);
- 2 the provision of the ex-gratia payment is a way to help pig farmers and their workers change to other occupations;
- 3 pig farmers can operate their businesses in Mainland China, for example, by relocating pig farms into the Guandong Province as it is close to Hong Kong;
- 4 Hong Kong cannot provide enough land for the long term development of the pig-farming industry;
- 5 the only contribution of the pig-farming industry is to stabilize food production and provide fresh meat (Legislative Finance Council Committee, 2008a; 2008b).

The view of the general public

The views of the general public toward the pig farming industry are speculative and fluctuate with the occurrence of the animal-human transmission diseases. For instance, the Prevention of H5N1: Reduction of the Risk of Human Infection of H5N1 Survey (Prevention of H5N1 Survey in short) was conducted by the governing institutions in 2005 suggested that the general public was worried about H5N1 effects on the health of citizens and the economy in Hong Kong. The survey also suggested that public safety and health is the first priority of citizens. However, another survey, Opinion Survey on the Incident of the H5N1 Bird Flu (Opinion Survey in short), which was conducted by the University of Hong Kong in 1999 had different interpretations. This survey suggested that the 'perception of the citizens

toward H5N1 threats is inflated,' reflecting temporary fears of H5N1 and even '90 percent of the interviewees said they were not worried that they might be infected with the H5N1' (Opinion Survey, 1998, pp14–15). When comparing the Opinion Survey with the governing institutions' survey – Prevention Survey of H5N1 – these two surveys presented two different outcomes. These results show that public opinion of the livestock industry is dependent on the number of animal-human transmission cases at any point in time. Fear and distrust over the local pig farming industry becomes exaggerated whenever there is a disease outbreak. According to the *South China Morning Post* (2003), the mass media amplifies the threats of the pig diseases by grossly exaggerating a general disease such as foot and mouth disease into epidemic level. There is no doubt that the general public is concerned about how H5N1 poses threats to livelihoods because of the reports of the mass media and the discourses constructed by the governing institutions.

The perception of the Federation of Pig Raising Co-operative Societies

The Federation of Pig Raising Co-operative Societies (TFPRSC) in Hong Kong opposed the new regulations on the pig farming industry because it is skeptical that the government wants to restore its credibility, retain goodwill from the general public, and fairly regulate the pig farming industry. Pig farmers commented in letters published in the FPRCS's magazine:

The government portrays a negative image of the pig farming industry by accusing the pig farming industry of causing the outbreaks of H5N1 and Japanese Encephalitis. This is a tactic for the government officials to restore their credibility from the general public by strengthening the controls of live pig production, retailing, and logistics. We are treading on thin ice because farmers can easily violate the Waste Disposal Ordinance, Public Health Safety Ordinance etc. Once farmers violate these ordinances three times within 18 months, their licenses will be revoked and their whole family will be put in jeopardy. The government mobilized numerous resources, like recruiting many officers to monitor pig farmers and devising lots of regulations to discipline farmers to follow the new rules. The underlying intentions are to strangle the whole industry and create a process of attrition. Then pig farmers will unintentionally perish in smoke and ashes. The government is happy to see this scenario because pig farms then will not hamper the economic development.

(Author's translation, TFPRSC, 2001 pp51–53).

Pig farmers' perceptions

In order to understand farmers' perspectives on LBBS, 21 in-depth interviews were conducted with pig farmers from September 2010 to October 2010. Pig farmers expressed their difficulties and opinions of the future development of the pig farming industry and new proposed Codes of Practices.

Mr Chan⁸ commented that the Codes of Practices

are impossible to follow because the rules are too strict for us. In fact, farmers already had an agreement in place with the government in the Livestock Waste Control Scheme since the 1980s. Without a doubt pig farmers had installed waste treatment facilities and treated animal wastes prior to any discharge. There is no reason to accuse us of being the major polluters of Hong Kong.

Mr. Leung⁹ commented the consultations organized by the AFCD 'are just a window-dressing to legitimize the number of farmers who participate in the consultations. The AFCD officials always promise farmers verbally; however, the suggestions from farmers are yet to materialize.'

Mr. Yuen¹⁰ argues that

almost every government department visits my farm. I don't know why the Housing Department also came to my farm. You know that the visits of government officials create pressure and psychological anxiety for me. Not only do I face the internal farm issues and hectic pig farming routines, but I face the frequent visits from the government officials. Why can't they allow me to raise my pigs peacefully?

From the above comments, one can see that pig farmers were worried about the proposed Codes of Practices, and the tightening controls on the pig raising industry. In fact, the AFCD is also responsible for the sanitary problems and the marginality of the pig farming industry. Reviewing AFCD's policies, free vaccinations and veterinary services were provided for pig farmers from the 1960s to the mid-1980s. However, the AFCD stopped providing free vaccination services in the late 1980s. At the 47th AFCD Livestock Subcommittee meeting, pig farmers had a debate with the government's veterinarians over the issue of veterinary service provision. A pig farmer representative argued that local pig farmers are unable to hire a veterinarian and 'this caused pig farmers to test different drugs on pig bodies and find out the right remedies for pigs' (47th AFCD Livestock Subcommittee 2007, p3). Inappropriate veterinary drug practice not only reduces pigs' resistance to

diseases, but it also reduces the effectiveness of drugs. Facing this situation, a government veterinarian replied that the AFCD only provides ‘verbal opinions on veterinary drugs usages, quarantine, and sterilization methods’ (ibid.) because ‘the suggestion of drug usage involves commercial considerations’ (ibid.), which are not suitable for a veterinarian to be involved in. This veterinarian suggested the farmers’ representative set up a drug record system and write down their animal drug usage experiences on their own. Facing the lack of veterinary services and support in Hong Kong, farmers should figure out different self-help tactics in order to sustain their businesses. The AFCD emphasised the control and monitoring of the pig farming industry but was unwilling to train husbandry veterinarians to help pig farmers combat pig diseases. Therefore, the governing institutions restricted veterinary services and produced a self-help mentality among pig farmers, which becomes a tactic to marginalize the pig farming industry. Even worse, the LBBS in 2006–2007 did not offer any capital grants to help pig farmers upgrade their waste treatment and sanitary management facilities. Therefore, on the one hand, the marginality of the pig farming industry drives pig farmers to give up their licenses. on the other hand, receiving the ex-gratia payment becomes the alternative for the pig farmers. Faced with the increasing precariousness of their marginalized situation, pig farmers reluctantly chose to give up their businesses in return for the ex-gratia payment. As a result, more than 222 pig farmers gave up their licenses in 2007.

Conclusion

To reduce the transmission of pig-to-human diseases and sanitary risks, the LBBS was launched to buy back the whole industry’s licenses and the new Codes of Practices were proposed to standardize spatial configurations to change farmers’ sanitary and pest control practices in pig farms. In the LBBS, the governing institutions problematized and constructed pigs as the hosts of contagious pig-to-human diseases. The sanitary discourse not only produced an uncertain pig-raising environment to coerce farmers to return their licenses but also highlighted the environmental conflicts (e.g. odor, risks of disease transmission, and pollution) between the pig farming industry and the general public. These conflicts produce political opportunities for the

governing institutions to regulate the sanitary and environmental problems of the pig farming industry and to justify the LBBS. This research exposes the defects in a dominant sanitary discourse that favored governing institutions in their efforts to reduce political risks in the domain of public health. The function of the sanitary discourse naturalized the active role of governing institutions to further regulate farm spaces through the proposed new Codes of Practices; farmers are imbued with the concepts of farm management, sanitation, and standardized spatial configuration. Additionally, the pig farming industry was further constructed as undesirable and problematic because of the perceived filth (e.g. manure management), sanitary concerns (e.g. sewage discharge) and the flows of problematic bodies of pig farmers, live pig handlers and transporters who assist virus transmission (e.g. Japanese encephalitis). In light of these developments, the majority of pig farmers (222 farmers) chose to give up their business in return for the ex-gratia payment. After the LBBS in 2008, there are only 43 pig farms still operating in Hong Kong. Through the lens of political ecology, this study critically rethinks the phenomenon of ‘voluntary surrender’ of pig farmers’ licenses and shows how the image of the voluntary is prejudicially constructed by governing institutions. Pig farmers were simultaneously dangled with the carrot of ex-gratia payments to give up pig farming or hit with the stick of stricter regulations under the proposed Codes of Practices, the latter of which may ultimately lead to a revoke of their license without compensation. It is hence arguable whether pig farmers have indeed ‘volunteered’ to surrender their licenses.

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Notes

- 1 The author had a discussion with Prof. Alan Smart on 21st October 2013 and he would like to acknowledge Prof. Smart's suggestion to use the comparison between vegetable and pig farming as an example to illustrate the rise and fall of the H.K. agricultural activities.
- 2 After the outbreak of the severe acute respiratory syndrome (SARS) in March 2003, the Chief Executive in Hong Kong established the Team Clean in May 2003 to formulate and implement policies in order to improve hygiene and provide environmental recommendations. For instance, the Food and Environmental Hygiene Department launched the Cleaning Hong Kong program to wash and clean up different streets in Hong Kong in 2001. Biosecurity measures and codes of practices were introduced to livestock and pig farming level in 2005 and 2007 respectively. The Public health monitoring network was activated on March 1, 2005 in order to provide an updated report of H5, H7 and H9 diseases. At the same time, the Center for Health Protection provided a leaflet to introduce hand-washing methods and other hygiene measures to the personal level.
- 3 This survey concerned the public views on the government measures to reduce the outbreak of H5N1 diseases and considered how citizens perceived (1) the health of Hong Kong people, (2) the impact of H5N1 on Hong Kong's economy, (3) the livelihoods of people engaged in live animal trade, (4) the culinary tradition of Hong Kong people and the reputation of Hong Kong as 'gourmet paradise' (Legislative Council, 2005, Paper No. CB (2) 566/04-05(03), p. 8–12.)
- 4 Human actors who interact with pigs include pig farmers, retailers, and transport workers and non-human actors include materiality such as pig farming spaces, vehicles, and abattoirs.
- 5 The ex-gratia payment is a financial compensation from the government to those farmers who would like to give up their licenses.
- 6 The governing institutions explained that, owing to time constraints, they could not consult on the Scheme with farmers. In this sense, the choices were created by the governing institutions without farmers' participation.

- 7 The mentality behind the use of the marking scheme is borrowed from the 'Marking Scheme for Tenancy Enforcement in Public Housing Estates' in 2003. This marking scheme is to control 28 misdeeds which affect public estate's cleanliness and hygiene conditions under Category A (3 points), B (5 points), C (7 points) and D (7 points). If tenant offences of public health issues reach 16 points within two years, the tenancy will be terminated.
- 8 In-depth interview H.K. 001, Hong Kong, September, 2010. An in-depth interview was conducted with a pig farmer who is still engaged in pig farming in Hong Kong. To protect the interviewee's privacy, I use Mr Chan as his pseudonym.
- 9 In-depth interview H.K. 004, Hong Kong, September 2010. This in-depth interview is conducted with a former member of the AFCD's Livestock Subcommittee. To protect the interviewee's privacy, I use Mr Leung as his pseudonym.
- 10 In-depth interview H.K. 007, Hong Kong, September 2010. This in-depth interview is conducted with a pig farmer. To protect the interviewee's privacy, I use Mr Yuen as his pseudonym.

References

- Agricultural, Fisheries, and Conservation Department (2003–2008), The 38th–52nd Livestock Subcommittee meeting's minutes
- Agricultural, Fisheries, and Conservation Department (2008) The Codes of Practices, File No: LS 1/08 Annex: 1–16
- Alberta Government, Hong Kong Office (2007) *Rearing Capacity of Pig Farms Further Diminished in Hong Kong*, <http://alberta.design97.com/market-news/rearing-capacity-of-pig-farms-furtherdiminished-in-hong-kong/>, accessed 30 May 2007
- Auewarakul, P. (2004). Harvard Public Health Review, http://www.hsph.harvard.edu/review/rvw_winter06/rvwwinter06_flucatehers.html, accessed 11 May 2011
- Blaikie, P. M. and Brookfield, H., (1987) *Land Degradation and Society*, Methuen, London

- Bryant, R. L. and Bailey, S. (1997) *Third World Political Ecology*, Routledge, London
- Bulkeley, H. (2005) 'Reconfiguring environmental governance: Towards a politics of scales and networks', *Political Geography*, vol 24, no 8, pp. 875–902
- Chan, K. W. (2011) 'Government regulation and governmentality in the Hong Kong pig farming industry, 1950–2008', ProQuest, UMI Dissertations Publishing
- Convery, I., Bailey, C., Mort, M. and Baxter, J. (2005) 'Death in the wrong place? Emotional geographies of the UK 2001 foot and mouth disease epidemic', *Journal of Rural Studies*, vol 21, no 1, pp. 99–109
- Cresswell, T. (1996) *In Place – out of Place: Geography, Ideology, and Transgression*, University of Minnesota Press, Minneapolis
- Cronon, W. (1992) *Nature's Metropolis: Chicago and the Great West*, WW Norton & Company, New York
- Davis, M. (2006). *The Monster at Our Door: The Global Threat of Avian Flu*, Henry Holt, New York
- Dodd, G. (1856) *The Food of London: A Sketch of The Chief Varieties, Sources of Supply, Probable Quantities, Modes of Arrival, Processes of Manufacture, Suspected Adulteration, and Machinery of Distribution, of the Food for a Community of Two Millions and a Half*, Longman, Brown, Green and Longmans, London
- Donaldson, A. (2008) 'Biosecurity after the event: Risk politics and animal disease', *Environment and Planning A*, vol 40, no 7, pp. 1552
- Emel, J. and J. Urbanik. (2010) 'Animal geographies: Exploring the spaces', in M. Demello (eds), *Teaching the Animal: Human-Animal Studies Across the Disciplines*, Lantern, New York
- Enticott, G. (2008) 'The spaces of biosecurity: Prescribing and negotiating solutions to bovine tuberculosis', *Environment and Planning A*, vol 40, no 7, pp. 1568

- Fairhead, J. and Leach, M. (1995) 'False forest history, complicit social analysis: Rethinking some West African environmental narratives', *World Development*, vol 23, pp. 1023–1035
- Federation of Pig Raising Co-operative Societies (TFPRSC) (2001) [Letters to the Pig Raising Co-operative Societies], 51–53, Hong Kong
- Food and Agriculture Organization (FAO) and World Organization for Animal Health (WOAH) (2005) *A Global Strategy for the Progressive Control of Highly Pathogenic Avian Influenza (HPAI)*. WHO, Geneva, <http://www.fao.org/avianflu/documents/HPAIGlobalStrategy31Oct05.pdf>, accessed 10 June 2011]
- Food and Environment Hygiene Department (2005). *The Prevention of H5N1: Reduction the Risk of Human Infection of H5N1 Survey*, FEHD, Hong Kong
- Grove, K. (2009) 'Rethinking the nature of urban environmental politics: Security, subjectivity, and the non-human', *Geoforum*, vol 40, no 1, pp. 207–216
- Holloway L. and Morris, C. (2014) 'Viewing animal bodies: Truths, practical aesthetics and ethical considerability in UK livestock breeding', *Social and Cultural Geography*, vol 15, no 1, pp. 1–22
- Lam, K., Tsang, O. T. Y., Yung, R. W. H. and Lau, K. K. (2006) 'Japanese Encephalitis in Hong Kong', *Hong Kong Medical Journal*, vol 11, pp. 182–188
- Law, J. and Miele, M. (2011) 'Animal practices', in B. Carter and N. Charles (eds), *Human and Other Animals: Critical Perspectives*, Palgrave Macmillan, Basingstoke, pp. 50–65
- LCFC: Legislative Council Financial Committee (2006), FCR (2006–07) 5, titled – New Item 'Ex Gratia Payments to pig farm licensees'/ New Item 'One-off grants to assist affected pig farm and live pig transport workers', pp. 1–16
- Legislative Council (2005) *The Food Safety and Environment Hygiene Committee*, LC Paper No. CB (2) 566/04-05(03), 'Prevention of avian

- influenza – consultation on long-term direction to minimize the risk of human infection’, pp. 8–12
- Legislative Council, Finance Committee (2008a) FC104/05-06, CB1/F/1/2 titled the “Ex-gratia payment” proposal to buy back pig farmers licenses’, pp. 1–13
- Legislative Council (2008b) *Panel on Food Safety and Environmental Hygiene*, LC Paper No. CB (2)1486/07-08). Hong Kong: The Legislative Council of Hong Kong
- Menon, K. U. (2011) *Pigs, People and a Pandemic: Communicating Risk in a City-State*, Nanyang Technological University Working Paper Series No. 6
- Neo, H (2012) ‘They hate pigs, Chinese farmers ... everything!’: Beastly racialization in multiethnic Malaysia’, *Antipode*, vol 44, no 3, pp. 950–970
- Nielsen, E. H. and Simonsen, K. (2003) ‘Scaling from “below”: Practices, strategies and urban spaces’, *European Planning Studies*, vol 11, no 8, pp. 911–927
- Opinion Survey: The Social Science Research Center Pop Express Survey, The (1999). *The Opinion Survey on the Incident of the H5N1 Bird Flu*. Hong Kong: The University of Hong Kong
- Paulson, S. and Gezon, L. L. (2004) *Political Ecology across Spaces Scales and Social Groups*, Rutgers University Press, New Brunswick
- Paulson, S., Gezon, L. L. and Watts, M. (2003) ‘Locating the political in the political ecology: An introduction’, *Human Organization*, vol 62, no 3, pp. 205–217
- Perdue, M. L. and Swayne, D. E. (2005) ‘Public health risk from avian influenza viruses’, *Avian Diseases*, vol 49, no 3, pp. 317–327
- Robbins, P. (2004) *Political Ecology: A Critical Introduction*, Blackwell Publishing Ltd
- Robbins, P. and Bishop, K. M. (2008) ‘There and back again: Epiphany, disillusionment, and rediscovery in political ecology’, *Geoforum*, vol 39, no 2, pp. 747–755

- Robbins, P. and Sharp, J. (2003) 'The lawn-chemical economy and its discontents', *Antipode*, vol 35, no 5, pp. 955–979
- Rocheleau, D. (2008) 'Political ecology in the key of policy: From chains of explanations to webs of relation', *Geoforum*, vol 39, no 2, pp. 716–727
- Rose, N. and Miller, P. (1992) 'Political Power beyond the State: Problematics of Government', *British Journal of Sociology*, vol 43, no 2, pp. 173–205
- Scott, J. C. (1985) *Weapons of the Weak: Everyday Forms of Peasant Resistance*, Yale University Press, New Haven, CT
- Serpell, J. A. (2004) 'Factors influencing human attitudes to animals and their welfare', *Animal Welfare*, vol 13, S145–S152
- Shrum, W. (2004) 'Science and the committee process: The presentation of the scientific self', *Social Studies of Science*, vol 34, pp. 472–432
- Simon, D. (2008) 'Political ecology and development: Intersections, explorations and challenges arising from the work of Piers Blaikie', *Geoforum*, vol 39, no 2, pp. 698–707
- Smart, A. and Smart. J. (2008) 'Time-Space Punctuation: Hong Kong's border regime and limits on mobility', *Pacific Affairs*, vol 81, no 2
- South China Morning Post* (2003) 'Pig Disease "not epidemic"', Collected from the fodder company's newspaper achieve
- Stibbe, A. (2003) 'As charming as a pig: The discursive construction of the relationship between pigs and humans', *Society and Animal*, vol 11, no 4, pp. 375–392
- Swyngedouw, E. (2008) 'Scaled Geographies: Nature, Place, and the Politics of Scale', in E. Sheppard and R. B. McMaster (eds), *Scale and Geographic Inquiry: Nature, Society, and Method*, Wiley-Blackwell, Boston
- Swyngedouw, E. and Heynen, N. (2003) 'Urban Political Ecology, justice, and the politics of scale', *Antipode*, vol 35, no 5, pp. 898–918
- Tao, K. C. (2008, April 8). [Pig Farmers' Letter to the Legislative Council]. The Legislative Council Achieve (LC Paper No. CB (2) 1514/07-08(02)), Hong Kong

Vukina, T., Roka, F. and Palmquist, R. B. (1996) 'Swine odor nuisance', *Voluntary Quarter*, pp. 26–29

Watts, M. (2003) 'Development and governmentality', *Singapore Journal of Tropical Geography*, vol 24, pp. 6–34

Zimmerer, K. S. and Bassett, T. J. (2003) *Political Ecology: An Integrative Approach to Geography and Environment-Development Studies*, Guilford Press, New York