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The Global Health Impact of Local Power Relations:

Fragmented Governance, Big Business and Organisational Bias in Indonesian Animal Health Policies

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ABSTRACT

In the study of global governance, little work has been accomplished to date on understanding how local power relations should be accounted for when designing international policies and institutions, and implementing interventions. This is especially true of global health issues, such as emerging diseases, infectious diseases with pandemic potential, and trans-boundary animal diseases. Highly pathogenic avian influenza - Influenza A (H5N1) - is a potent example that crosses all three of these categories, and Indonesia offers a useful example of how local, national and sub-national power dynamics can carry complex and unexpected externalities for the world at large, bias international interventions, and challenge the conceptual foundations and the workings of global governance ideals and institutions. Researching power relations is never easy, given the often subtle social interactions involved, the significance of the stakes, and the consequent reluctance of many actors – both dominating and dominated – to hand over key information. Nevertheless, this study has approached these issues through interviews with a wide range of stakeholders at central, district and local levels. It focuses on three case studies, each of which has its own dynamic sets of power relations: 1) the poultry market chain, especially in the conurbation of Jakarta; 2) the replacement of Law No. 6 of 1967 regarding Animal Husbandry and Veterinary Hygiene with Law No. 18 of 2009 regarding Livestock Production and Animal Health; 3) the pitfalls of the international response to the avian influenza (AI) crisis in Indonesia.

The first case study shows the importance of examining the internal structure of the private sector to understand the local political economy of negative externalities for international health. The current structure of the poultry industry in Indonesia, as illustrated by the supply to Jakarta, displays embedded animal health risks and dysfunctional incentives in times of crisis that should be of concern to the international community. The poultry market chain seems frozen in a stage of “half modernisation” which increases health risks, as large industries enhance the scale of poultry farming and the possibilities of creating viruses resistant to vaccines. Meanwhile, their intricate connection to a vast and fragmented network of pre-industrial farms opens routes for the spread of potential infections. The poultry sector is characterised by a small number of industrial core companies, working with thousands of small farms within the so-called “inti-plasma” (or contract farming) system. Downstream from the farms, there are too few and mostly pre-industrial slaughter houses, inappropriate transport systems, and live markets, which open up many routes for the virus to spread and further challenge the management of outbreaks. Given the human and animal density in

Indonesia, this structure creates significant animal and human health risks for the international community. The structure of incentives faced by most actors of the poultry sector (large companies, small farmers, transporters and merchants) is also dysfunctional as no effective financial compensation scheme (for culling) enables true cooperative behaviour and information sharing. When outbreaks occur, the producers' interest is actually to move the meat quickly to the market. All of this demonstrates that the inti-plasma system, developed in Indonesia to enhance rural development and employment, coupled with incomplete and poorly enforced local regulations, generates significant international risks that are rarely understood and talked about. An analysis of the political economy and interest games behind this economic structure shows that there is a need to challenge local power relations within this industry. This, for instance, might mean providing access to credit to farmers and freeing them from the rule of local "brokers" who charge usury rates (*e.g.* 2% per week). As for larger companies, they also make their profit from the smaller farmers by selling inputs at controlled prices. Another source of profit is their capacity to bet and speculate on market prices, through highly fluctuating levels of production. This increases price volatility and again prevents the sector from modernising and upgrading to higher animal health standards.

The second case study concerns the political economy of domestic policy making processes related to animal health. More specifically, it examines the formulation of Law 18/2009 on Animal Husbandry and Veterinary Hygiene. In a nutshell, the study argues that the relatively low political and administrative weight of the veterinarian profession in Indonesia creates negative impacts on international health. The new law is still far from recommended OIE procedures. It has rather been shaped by competing agendas which include food security, business interests related to the ability to export and import, and rivalry between professions, notably veterinarian and husbandry specialists, for administrative authority. In this process, veterinarians have not secured the authority they were seeking as no precise procedure has been introduced that ensures that they have a critical say in the management of animal health crises. This authority is still in the hands of the Ministry of Agriculture, which is largely dominated by "production oriented" husbandry specialists. Small farmers also see themselves as losers, since the principle of sanction has been established for not reporting outbreaks, yet no financial compensation scheme has been formalised for culling infected poultry. Beyond this, arguably, consumers are also largely left out of the picture, as the law is not designed to address their concerns or needs. This is an area where the international community may want to consider increased intervention – by stimulating the constitution of consumer organisations generally and, more specifically, by encouraging the involvement of civil society in demanding transparency on animal health issues.

The third case study examines the biases that have occurred in the response of the international community to the avian influenza crisis. The United Nations Food and Agriculture Organization (FAO), the World Health Organization (WHO), bilateral donors and Indonesian ministries alike rapidly accepted the idea of the inbuilt "biosafety" of industrial production. Moreover, a "pro-poor" lens applied by donors and the domestic government lead to a reduced involvement of the commercial sector in shaping the diagnosis and policy strategies. Consequently, attention focused on so-called "backyard farming", an outlook that translated into wide-ranging community-based surveillance and response systems, mass communications campaigns, and concerns about the cultural habits of Indonesians with birds. Large industries were excluded, or excused, from the HPAI response effort, attention focusing instead on smaller producers and hobbyists (so-called Sector 4 in the FAO typology). Meanwhile, it is increasingly recognised that industrial farming can be a generator for animal diseases such as HPAI, given its high concentration of animals and the poor genetic biodiversity. In this case study, the techno-scientific biases of organisations such as FAO are examined, as well as their organisational cultures of working with small producers. Attention is also given to the incentives large companies face, and their sometimes opaque sources of power among public sector and private actors. The bottom line is that the international organisations, which had an obligation and an imperative to act, exercised their influence where they could – which was not in the commercial sector.

In the concluding section some thoughts are offered on how global health governance efforts may better take stock of and adapt to local power relations that bear negative international impacts. First, the need to secure greater trust between northern and southern countries is posited: state cooperation in this realm urgently needs to be based on clear, mutually agreed norms, as well as a greater sense of reciprocity and solidarity. Second, it is suggested that there is a need to create regional or international controls "with teeth" over large agro-businesses. In contexts of highly fragmented domestic governance, large agro-businesses can find themselves essentially unaccountable, while still potentially threatening large sections of local or global society. Third, a contention is made regarding the "community-based" approaches that have become part and parcel of global governance discourses. These may not always provide the best paths to deal with public health issues: an increase in top-down regulation and capacities is also often needed. Fourth, it is argued that there is a need to strengthen international organisations' capacities for ongoing reappraisal and direction change. This can be challenged by the need to "disburse" and an ingrained "pro-poor lens" that tends to bias analysis and policy responses. The processes of identifying and assessing local health crises of global significance urgently need to be rethought. One important

question is how international and bilateral agencies might adapt their work and concerns to modern industrial agro-business in pursuing the “One World One Health” agenda. Fifth, improved definition of coordination responsibilities among international actors is advocated. In this endeavour, FAO might configure itself more determinedly as an enabling interface for any implementer wishing to work with various state bodies. This compares with the position of the organisation as an implementer itself. Sixth and finally, strengthening central veterinary authority and capacity is a critical agenda in the emerging world that touches on power relations, notably within public administrations, that are inevitably tough to modify. In this endeavour, there may be a role for the international community in supporting this professional group more explicitly and on a larger scale, as well as in fostering the development of civil society organisations protecting consumers’ rights. In the long run, internal checks and balances driven by local demand may provide more potent self-monitoring incentives to the local private sector than any international intervention.

INTRODUCTION

The scant attention paid to date by donors and academics to understanding how local power relations may affect the design and implementation of international policies and institutions is not unexpected. Medical and veterinary professionals are, sensibly, usually in the front line of investigations into new diseases, and designing and implementing responses to them. The interests of these organisations, however, and the individuals that constitute them, inevitably starts not with the environment, but with the pathogen, and to extend the environment explicitly into the political involves crossing large conceptual and professional divides. Medical and veterinary science is simply not meant to be political, and consequently the political domain is generally ignored or side stepped. As the nub of politics, power is a particularly uncomfortable zone for international funding, development and technical agencies. Given its diffuse nature and subtle and culturally located mechanisms, it is also often difficult to capture within social research, especially by "global" researchers working in "local" contexts.

Nevertheless, this study aims to examine how power relations have affected the policies and practices associated with the response to H5N1 highly pathogenic avian influenza (HPAI) in Indonesia, a large lower-middle income country with complex geography, politics and history, and one of the regions most badly affected by the disease in the world.

It looks at the Indonesian context – characterised by fragmented governance, a weak regulatory environment, a powerful and concentrated productive sector – and investigates how these factors have affected global efforts related to disease control, and how these efforts could be better directed and managed. It also looks at the international donors and actors themselves, examining the extent to which their own internal cultures and biases have shaped their responses.

Crossing human health, animal health, food security, nutrition, and agricultural and pharmaceutical business domains, H5N1 avian influenza offers a valuable window on the complexity of global health governance. This study aims to aid understanding of the development of human and animal health policies in Indonesia and identify implications for global health governance. It describes and analyses power relations through three case studies with the intention of shedding light on policy processes in Indonesia, and their implications for the global community, especially in the context of the "One World, One Health" approach and current examinations of health and food-security related global public goods.

1. APPROACHING GLOBAL HEALTH FROM A LOCAL PERSPECTIVE

Global Governance in Fluid Times

Global health policy has now been with us for over 150 years. Between 1851 and 1881, with a view to containing outbreaks of plague, cholera and yellow fever, five conferences focused on the harmonisation of border controls. With the creation of the World Health Organisation in 1948 and the emergence of Official Development Assistance (ODA), cooperation increased further and some important successes were achieved: smallpox was eradicated in the 1970s, measles and diphtheria have been controlled, and in half a century the average infant mortality fell from 135 to 61 per thousand live births in the South. Safe water and improved hygiene have contributed greatly, as well as immunization programmes. Another recent optimistic element has been the increasing involvement of NGOs and private foundations in global health issues, and the proliferation of public-private initiatives such as the Global Fund against AIDS, Tuberculosis and Malaria.

Today's challenges, however, suggest there is no room for complacency. The globalisation of trade – in particular of food – mass tourism and migration have accelerated the viral and microbial unification of the planet. The number of HIV/AIDS infections is still rising; new diseases like Severe Acute Respiratory Syndrome (SARS) and Bovine Spongiform Encephalopathy/Creutzfeldt-Jakob Disease (BSE/CJD) emerge; and old ones, such as tuberculosis, persist. These dangers are exacerbated by population dynamics: over the next 20 years, the world's population is expected to increase by 1.5 billion, and will increasingly be clustered in dense urban areas. Meanwhile, the demand for and the production of animals for meat is rising rapidly worldwide, raising new issues concerning the interactions between animal and human health. To cope with such developments, a renewal of the global health agenda is required. This hinges on a number of diverse challenges.

Fundamentally, there is the issue of the availability and transmission of information. This needs to be coupled with a "right of health intervention" with a view to strengthening the powers of international institutions and norms *vis-à-vis* "recalcitrant" states. These are both important elements in the 2005 revision of the International Health Regulations. Related issues, particularly in poor countries, often include a lack of monitoring and epidemiological capacity, and a surfeit of other problems which are simply more pressing. The capacity of countries to "absorb" international aid is also an issue. Too often, weak political and public health institutions render external support ineffective. This is illustrated by the difficulties sometimes encountered by major "global funds" to implement action with their millions. A

further major challenge relates to intellectual property rights. The appropriate legal and financial balance has not yet been found that would give people in developing nations wide access to new drugs, while encouraging industries to increase their research investments. A global health policy needs to take advantage of the expertise of private enterprises in health care delivery. The financing of "health aid" needs also to be rethought. The upgrading of health systems in countries that lack resources can generate significant and recurring labour costs. In response, regular and predictable international funding may become necessary, along the lines of an international tax on air tickets.

Another important challenge is the growing inter-connection between animal and human health, given the rising demand and production of animals for human consumption. Between 1940 and 2004, 335 new infectious diseases emerged globally, over half of which (60.3%) were zoonoses – diseases resulting from pathogens transmitted from animals to humans (Jones *et al.*, 2008, p.990). Such zoonotic Emerging Infectious Diseases (EIDs) include Marburg and Ebola hemorrhagic fevers, Nipah virus encephalitis, Lassa fever, SARS, and HIV/AIDS. Glinski and Kostro (2005) suggest that 75% of future epidemics will result from zoonoses. In these circumstances, HPAI is not only "one of the most devastating animal diseases in the world",[1] but also a valuable example of a major human health threat.

The "One World, One Health" concept first emerged at a 2004 symposium organised by the Wildlife Conservation Society in New York. The event focused on disease movements among human, domestic animal and wildlife populations, and identified priorities for an international, interdisciplinary approach to combat threats to animal human and eco-system health. The resulting "Manhattan Principles" listed 12 recommendations for establishing a more holistic approach to preventing epidemic/epizootic disease and for maintaining ecosystem integrity and biodiversity.

On top of these challenges, another one remains shadowy, although it nurtures and enhances them all: the need to understand and take account of local power relations in understanding international health externalities and responding to them. Whether this is through deficient governance, the impunity of private companies, dysfunctional incentives of various private and public agents, the issue of power is pervasive.

[1] Ilaria Capua, Head of Virology Department, Istituto Zooprofilattico Sperimentale delle Venezie, Presentation at Sixth International Ministerial Conference on Avian and Pandemic Influenza, Sharm el-Sheikh, 26 October 2008.

Avian Flu as a Global Threat

The 2009-10 Influenza A (H1N1) "Swine flu" pandemic has significantly eclipsed "Bird flu" in many ways, not least public concern, but the danger of an H5N1 mutation, and a related pandemic, remains the same. The H1N1 event has however made clear Northern publics' concerns regarding pandemic influenza, and the powerful interests at play globally in the face of such sudden onset and potentially extensive health threats.

Avian influenza (AI) is a viral disease that normally affects only birds and, occasionally, pigs. There are different strains of the virus and the highly pathogenic (HP) strains, such as H5N1, kill almost all infected poultry within 24 hours. Like all influenza viruses, H5N1 can infect humans. It may also mutate into a more infectious form. Before 2003, HPAI was rare, with only 20 outbreaks reported between 1959 and 2003 (caused by H5N1 and other subtypes).[2] In 1997, however, "Bird Flu" arrived in the world's media circus, when an H5N1 Influenza A virus caused 18 recorded human cases and six deaths in Hong Kong. All poultry in Hong Kong were subsequently culled and a strict regime of market sanitisation introduced, but in 2003 the disease re-emerged and spread first across East and South East Asia, and then, from 2005-2006, into the Middle East, Africa and Europe. There have now been an uncountable number of HPAI outbreaks caused by H5N1, and as many as two billion of the estimated 18 billion poultry birds in the world may have been killed by the disease, or culled to prevent its spread.[3] In many parts of Africa and Asia, where veterinary services are under-resourced and poorly prepared, chicken and eggs are important sources of protein, and related economic shocks, which have run into billions of dollars, have hit small farmers and commercial poultry producers badly.

Like other HPAI viruses, the H5N1 virus is highly species-specific, and to date, few humans have been infected. Although a large proportion of those have died, the total number of reported cases is small. Since 2003, there have been over 476 confirmed human cases and 284 deaths reported in 15 countries.[4] This includes 161 cases and 134 deaths in Indonesia, the worst affected country, 112 cases and 57 deaths in Vietnam, and 90 cases and 27 deaths in

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[2] See http://www.medicalnewstoday.com/articles/6306.php [accessed 15 May 2010].

[3] Charles Lambert, Deputy Under Secretary, USDA, Presentation at Sixth International Ministerial Conference on Avian and Pandemic Influenza, Sharm el-Sheikh, 26 October 2008.

[4] International Ministerial Conference on Animal and Pandemic Influenza 20-21 April 2010 Hanoi, Vietnam. Report "Animal and Pandemic Influenza: A Framework for Sustaining Momentum" available at: http://un-influenza.org/files/Animal_and_Pandemic_Influenza-AFrameworkforSustainingMomentum.pdf.

Egypt.[5] Humans can get infected through close contact with dead or infected birds and by contact with bird droppings or equipment such as dirty cages.

The great danger of influenza viruses is their ability to mutate, or reassort, and at any time a subtype may emerge with an increased ability to infect people who would have no immunity against a novel virus, and to spread easily from person to person. Once a fully contagious pandemic virus emerges, its global spread is considered inevitable. These pandemics are considered rare but recurrent events. Other subtypes of the virus caused at least two of the last century's three major influenza pandemics. The 1918-20 "Spanish" influenza event killed an estimated 40–50 million people worldwide, and 1968-9's "Hong Kong" influenza resulted in over 700,000 deaths (WHO, 2005). A global influenza pandemic would also hit the global economy badly. In 2005, the World Bank estimated that an influenza pandemic would cost the world economy around US$800 billion (World Bank, 2005).

Global Response: International Funds and Political Will

Avian influenza and the possibility of a related human influenza pandemic are therefore seen as a major global challenge requiring a major global response. On 14 September 2005, President Bush demonstrated US concerns by announcing the International Partnership on Avian and Pandemic Influenza (IPAPI)[6] at the United Nations General Assembly, and later that month, the UN appointed a senior coordinator responsible for multilateral action. In November the same year, WHO and FAO, working with OIE, produced a global strategy focusing on enhanced national and regional collaboration, improved laboratory and surveillance capacity, containing outbreaks through culling, biosecurity and vaccination, and public communication programmes.[7] In January 2006, an international conference in Beijing, co-hosted by the Government of the People's Republic of China, the European Commission and the World Bank, raised pledges of US$1.9 billion for affected countries and countries at risk. The final "Beijing Declaration" announcing, "... a long-term strategic partnership between the international community and the countries currently affected or at risk in which adequate and prompt financial and technical support is mobilized to complement the efforts by countries and regions, particularly developing countries" was endorsed by 99 countries.

[5] http://www.who.int/csr/disease/avian_influenza/country/cases_table_2009_12_30/en/index.html [accessed 15 May 2010]

[6] www.hhs.gov/pandemicflu/plan/pdf/AppH.pdf [accessed 15 May 2010].

[7] http://www.un-influenza.org/node/2468 [accessed 15 May 2010].

International activities continued through 2006. June saw strong cooperation between UN technical agencies at a meeting in Rome, and in December, another ministerial conference organised in Bamako, Mali, raised further pledges of approximately €370 million. In December 2007, another conference in New Delhi, attended by 111 countries and 28 international organisations, called for a "long-term vision" and brought the "One World, One Health" approach into play. This broadened the AI response to include other emerging and re-emerging zoonotic disease threats, encouraged governments to build links between human and animal health systems, and invest in capacity for preventing and controlling infectious diseases in animals, both internally and with neighbour nations. These objectives sat well with the 2005 revision of the 1969 International Health Regulations (IHR), which signalled an important shift in the international governance of public health issues, with a ceding of national sovereignty, at least in theory, in the face of a global threat.

IHR 2005 is regarded as an historic development for international law on public health. The previous 1969 regulation was severely constrained as it applied to just three diseases – cholera, plague and yellow fever. The new regulations were expanded to cover any "public health emergency of international concern", including biological, chemical and radiological releases, and naturally occurring, accidental and intentional events. Furthermore, a new class of event, the Public Health Emergency of International Concern (PHEIC) was introduced, the definition of which was based on risk assessment principles; WHO was empowered to use a wider range of surveillance sources, including unofficial, non-national, sources; and states were required to establish National Focal Points, with defined core capacities for surveillance and response, which are responsible for communication with WHO and for the collation and dissemination of information within each state. New processes were introduced for WHO to investigate, assess, and declare PHEIC, and to formally recommend health measures. IHR 2005 also established national IHR focal points to facilitate rapid sharing of surveillance information with WHO and disseminate information within the state party (Baker & Forsyth, 2007).

The globally driven response to H5N1 highly pathogenic avian influenza (HPAI) has seen some tremendous success. Although 62 countries reported the disease in domestic poultry and wildlife between 2003 and 2009, the number of afflicted countries has fallen over the last three years from 35 in 2007, to 28 in 2008, 17 in 2009,[8] and in 2008, just eight countries were

[8] Source: http://www.oie.int/eng/info_ev/en_AI_factoids_2.htm [accessed 15 May 2010] as well as note 2009: Afghanistan, Bangladesh, Cambodia, China (and Hong Kong), Côte d'Ivoire, Germany, India, Japan, Laos, Mongolia, Nepal, Nigeria, Russia, Spain, Thailand, Togo and Vietnam.

responsible for 90% of outbreaks,[9] including Bangladesh, China, Egypt, Indonesia, Nigeria and Vietnam.

Some countries have successfully eradicated the disease. Malaysia declared itself free from the disease on 7 September 2007, Myanmar on 20 April 2008, Cambodia on 7 October 2008, Lao PDR on 29 December 2008 and Thailand on 27 February 2009. The only two countries in Southeast Asia that have so far been unable to control the disease are Indonesia and Vietnam, where HPAI is now considered to be endemic (FAO, 2009).

In October 2008 at the Sixth Ministerial Conference in Sharm el-Sheikh, Egypt, four specialised agencies – FAO, OIE, WHO and UNICEF, together with the World Bank and the UN System Influenza Coordinator (UNSIC) – presented a consultation document[10] in response to the New Delhi recommendations. It built on lessons learned from the response to the H5N1 panzootic, urging enhanced disease intelligence, surveillance and emergency response systems at national, regional and international levels, improved public and animal health services, and effective national communication strategies. A high level review proposed seven factors as crucial to success in responding to AI.[11] The first was high-level political commitment. The second was the ability to scale up in key sectors, and the third was improved management of veterinary and medical services, and transparent information sharing. The fourth was clear incentives to encourage reporting, with effective compensation schemes, and the fifth, effective strategic alliances of civil society, the private sector, and all levels of government. The sixth identified research, product development and technology transfer, and the seventh, collective government support for mass communications on HPAI and healthy behaviour.

Indonesia's Context and Response

Indonesia is challenged in all these areas. Since 2003, when it was first detected in central Java, the disease has spread to 31 out of 33 provinces, caused over $500 million in economic losses,[12] disrupted the livelihoods of over 10 million people who are reliant on the poultry

[9] Kent Hill, Assistant Administrator for the Bureau for Global Health, USAID, Presentation at Sixth International Ministerial Conference on Avian and Pandemic Influenza, Sharm el-Sheikh, 26 October 2008.

[10] A Strategic Framework for Reducing Risks of Infectious Diseases at the Animal-Human-Ecosystems Interface.

[11] David Nabarro, UNSIC, Presentation at Sixth International Ministerial Conference on Avian and Pandemic Influenza, Sharm el-Sheikh, 25 October 2008.

[12] KOMNAS FBPI Presentation, 10th National Veterinary Conference of the Indonesian Medical Association, Bogor, 20 August 2008.

industry,[13] and killed 135 people out of 163 confirmed human cases, mainly children and young adults.[14] HPAI is now endemic in Java, Sumatra, Bali and South Sulawesi, and sporadic outbreaks continue to be reported in other areas.[15]

Indonesia has also received the largest financial commitment to fight avian influenza from the international community, totalling over $138 million.[16] The organisations initially charged with designing and implementing the response – FAO, WHO, and the World Organization for Animal Health (OIE) – have advocated, and are implementing a response, focussing on "universal" scientific and technical principles, including disease surveillance, movement controls, vaccination, culling (with compensation advocated but in practice under-financed). Simultaneously, a wide range of communications initiatives, led by UNICEF and USAID contractors, have taken the perceived dangers of the disease to the masses.

Poverty, geography and culture: a bubbling pot of potential viruses

A wide range of economic, environmental, geographical and socio-cultural factors affect animal health management in Indonesia. Historically, and today, the region experiences economic uncertainty, inadequate infrastructure, and regular natural and unnatural disasters, as well as separatist agitation and intermittent sectarian violence. With more than 235 million citizens[17] spread over some 6,000 islands in a 17,508 island archipelago that stretches over 5,000 km between mainland Southeast Asia and Australia, just the size and geography of the country conspire against an easy response to health crises. Ranked 107 out of 177 countries in the UNDP's 2007/2008 Human Development Index, GDP per capita stood at $3,471 in 2006 (PPP, current international dollars), marking Indonesia as a lower-middle income country. However, 40% of the population live on less than $2 a day (Asian Development Bank, 2008).

Culturally and economically, the country is dominated by the island of Java (the Javanese and the Sundanese from western Java make up over half the Indonesian population), which has a remarkably high population density of nearly 1,000 people per square kilometre. Across the

[13] http://www.nzaid.govt.nz/programmes/c-indonesia.html, accessed 7 November 2009.

[14] http://www.who.int/csr/disease/avian_influenza/country/cases_table_2010_04_09/en/index.html, accessed 7 November 2009.

[15] FAO (2008).

[16] International Ministerial Conference on Animal and Pandemic Influenza, 20-21 April 2010, Hanoi, Vietnam. International Financial and Technical Assistance. Report available at: http://un-influenza.org/files/International_Financial_Technical_Assistance.pdf.

[17] Nearly every statistic relating to Indonesia needs to be treated with caution. A 2008 study found a shortfall of 36 million people in the national electoral roll, for example (Jakarta Post 21/8/08).

country, over 300 ethnic groups speak over 700 languages and dialects. Over half of all households keep poultry at home, and chickens, together with other birds, play an important role in culture and provide the poorest with something to eat and trade. Indonesia is also a numinous culture. Fatalism and humility prevail in the face of threats from the natural world in particular. Despite being an ideal place for a human influenza pandemic to start, there is little popular conception of such an event, and poor comprehension of its consequences.

All Indonesian poultry production is consumed domestically and imports are negligible. Chicken is Indonesia's favourite meat, and around ten conglomerate companies control all industrial production, with three responsible for 70% of the market (Sumiarto & Arifin, 2008). Most integrators operate at least partially under sub-contracting schemes that see poultry, material associated with poultry production, and waste products, widely transported about the countryside. Small-scale and village farmers also make a significant contribution to production, and hobbyists abound. The free-ranging ducks (carrying the disease without symptoms) and paddy (rice) fields (supporting their husbandry) that have been implicated in studies of HPAI in other Southeast Asian countries (Gilbert *et al.*, 2008) are present. A fundamental feature is the remarkably dense human population living closely with a remarkable number of poultry, and other birds, particularly on Java.

The country produces around 1.5 billion poultry birds each year, and has a standing population of around 600 million birds, of which around 70% are commercial broilers, 20% are native "*ayam kampung*" (village chickens), 8% are layers and 2% are ducks. Some 30 million homes, 60% of all Indonesian households, are estimated to keep around 300 million chickens ("*ayam kampung"*) and/or ducks ("*bebek*") and quail ("*burung puyu*") in their backyards (Normile 2007, p.31). Many Indonesians – particularly the Javanese, the Sundanese and the Balinese – have a strong affection for poultry and other birds. Foraging chickens are a common way for poor people to earn additional income and secure food, and they often serve as a form of capital, which can be sold quickly to pay for items such as school uniforms and medical bills (Padmawati & Nichter, 2008).

A complex political landscape

Politically, Indonesia is a dynamic young democracy emerging from 40 years of autocratic rule. Created out of political repression, economic hardship and the triumph of people power, today's political environment might be characterised as a democracy in formation where protest is usually met by political compromise. Under Dutch rule for over 300 years, and one of the Netherlands' richest colonies in the 1800s, Indonesian independence was declared in 1945, recognised in 1949, and until 1965 the country was under the fragile and then

authoritarian regime of President Soekarno (see Feith, 1962). From 1968, when he was formally appointed, President Suharto reversed many of Soekarno's policies and initiated a "New Order", which saw foreign debt rescheduled, an inflow of aid and investment, and significant economic growth. This history makes for a complex political landscape. At the national level, and at that of some 456 now autonomous districts and municipalities, there is little trust in the central government. This is sometimes justified. Despite good intentions, all post-1997 administrations have suffered a degree of continuity with those of the past, which were characterised by institutionalised corruption, opaque processes and collusion with business interests (Chalmers, 1997).

The 1997 Asian economic crisis devastated the economy and provoked dramatic political change. Popular discontent and resentment at the government's corruption manifested in urban riots and Suharto was forced to resign in May 1998. His Vice-President, B.J. Habibie was subsequently sworn in as President, and in a state of the nation address on 15 August 1998,[18] he suggested that the proportion in poverty had soared to 40%.[19] In what became known as the *Reformasi* era, the regime liberalised, political prisoners were released, controls were lifted on the press, independent political parties and unions were sanctioned, and political and economic stabilisation became the main tasks of government. In June 1999, the country held its first free legislative elections and the People's Consultative Assembly (MPR) subsequently selected Abdurrahman Wahid as President, who offered the Vice-President position to Megawati Sukarnoputri (Soekarno's second child and first daughter). In July 2001, however, Wahid was implicated in two corruption scandals, impeached, and Megawati was sworn in as the fifth President (O'Rourke, 2002). In July 2004, the first direct presidential elections were held and Susilo Bambang Yudhoyono (known by his initials SBY) won a clear victory in a second round run-off against Megawati.

SBY's administration has set a new tone of competence and political accountability, and has acted significantly in the struggle against pervasive corruption, but the economic and political situation is widely perceived to be, if not in a state of flux, at least mutable. Economically, the country is more resilient than it has ever been, if not growing so dynamically,[20] but exchange rates still wander alarmingly, and rapid changes in the prices of raw materials and basic

[18] Jakarta Post 16/8/98 and in Bourchier and Hadiz (2003)

[19] Fabiosa et al (2004) report real per capita income dropping from $1000 in 1996 to $205 in 1998.

[20] Despite a slowing global economy, national economic growth reached a ten-year high of 6.3% in 2007 with unemployment falling to 9.1%, exports growing, and the balance of payments account showing a surplus (McLeod 2008:185-186, CEIC Asia database).

commodities make forward planning difficult for business and government alike. Politically, the picture is brighter now than ever, but significant patches of poverty and extreme contrasts of wealth suggest that it is much brighter for some than others, and that dangerous fragilities are not far beneath the surface. Perhaps living on a chain of volcanic islands fixes minds on the here and now, rather than tomorrow, or the day after, but this is not a mind-set well suited to the years or even decades of determined and consistent activity required to combat a highly infectious disease entrenched in millions of small animals.

Operationalising the international response: successes, failures and biases

The HPAI response in Indonesia has been led by international agencies. FAO, working with the Indonesian Ministry of Agriculture, has been in the front line, creating and implementing disease control plans designed, and led, by veterinarians and public health experts. The scale of the problem is awesome, however, and technical, science-led, approaches such as vaccination are proving challenging to implement in village and backyard settings. The need to understand and get involved with critical issues such as compensation for culling, for example, which involves disbursement of small sums of money to large numbers of people, adds huge complexity, some of it political.

Communications, led by the United Nations Children's Fund (UNICEF), and organisations such as Development Alternatives, Inc., have been more fragmented but no less extensive. Very successful in raising awareness, they have affected long-lasting attitude or behaviour change less convincingly. WHO has been faced with the most extreme political difficulties, despite pressing needs for scientific research and improvements to the healthcare system. It has however added important capacity.

Scaling up and improving the management of veterinary and medical services in Indonesia will, however, be the work of decades rather than years, given the low levels currently existing, as the challenges of disbursing funds into them have shown.[21] Incentives to encourage reporting are at best patchy given the confusion and inconsistent regimes of compensation attached to culling infected birds, and the stigma and unwelcome attention of owning them. Regarding transparent information sharing, research, product development and technology transfer, again Indonesia starts from a low baseline[22] and political wrangling

[21] Interviews, Washington 11 June 2008, Jakarta, 28 August 2008, Sharm el-Sheik, 27 October 2008.

[22] An informal analysis of PubMed's (www.ncbi.nlm.nih.gov/pubmed/) 18 million citations ranks Indonesia's academic output as the lowest in the region with a score of 1.8 compared with Vietnam at 5.4, Malaysia at 11.8 and Thailand at 14.7.

emanating from the Ministry of Health has made even dialogue designed to move these elements in the right direction difficult.

Study Concepts

Adopting a political economy perspective, this study examines how power is constructed, contested and used within and among grass-roots, local, regional, national and international actors in Indonesia involved with the spread of HPAI, and the response, paying special attention to the following four areas:

1. Public actors, elected and civil service, involved in the formation, promotion and implementation of "legitimate" authority in Indonesia's dynamic young democracy. This domain includes actors and networks involved in the dynamics of Indonesia's extensive decentralisation programme, the realities of "hyper-local democracy", and local level authorities.
2. Commercial actors in the large, independent and powerful poultry industry, and the smaller cooperatives and independent poultry farmers. This includes the interactions between the formal and informal economic sectors, and risk and profit sharing between large industrial conglomerates and smaller producers.
3. Relations between public and private actors. This includes the potential opacity and impunity of some of the biggest private players of the sector.
4. Power relations between international development actors and domestic ones (public/private) and the challenges of implementing a rationalist, science-led response in a complex political, social and ecological environment.

How power is exercised was investigated using a fourfold understanding of the dimensions of "power" (Barnett & Duval, 2005): 1) Coercive power – direct influence of A over B through coercion or manipulation of incentives; 2) Institutional power – indirect influence of A over B through an effective use of intermediary institutions – such as markets or organisations; 3) Structural power – influence through long-standing structural social categories that give pre-eminence to certain actors; 4) Productive power – power is defined through emerging discourses that provide increasing influence to certain actors.

Methodology and Case Studies

Researching power relations is never easy, given the often subtle social interactions involved, the significance of the stakes, and the consequent reluctance of many actors – both dominating and dominated – to hand over key information. Nevertheless, this study has approached these issues through interviews with a range of stakeholders at central, district and local levels, providing them whenever needed with a pledge of anonymity. The study has focused on three areas, each of which has its own dynamic sets of power relations:

– West Java to Jakarta – the market chain

The Jakarta conurbation (in its widest form often referred to as JABODETABEK, encompassing Jakarta, Bogor, Depok, Tangerang and Bekasi) has a population of over 12 million, and around one million chickens are estimated to be consumed each day within it. The majority of these birds are brought live into the city on small trucks to be slaughtered and sold at 350 or more traditional markets. A roughly crescent-shaped arc of producers, stretching from Sukabumi in the west to Ciamis in the east (encompassing Garut and Taskimalaya) is within reach of Jakarta by road, and provides the majority of these birds. This area is also one centre of persistent H5N1 infection in poultry. The integrated broiler production system is a complex web of activity centred around poultry distributors who usually act as agents for large poultry companies, supplying day-old chicks, feed, medicine and sometimes vaccines to contract farmers running mid-sized operations of typically 10,000 birds.

The study has focused on the patterns of supply between West Java and the markets in Jakarta. Interviews with farmers, drivers, middlemen and marketers, as well as with representatives of the large commercial firms, and the international, national and regional agencies implementing the H5N1 response, offer an analysis of the power relations involved in the supply chain. Why are the producers so numerous and relatively small-scale? What influence do the poultry growers' professional associations have? Why is the market dominated by such a small number of large and highly profitable conglomerates?

– Law No. 18 of 2009 on Livestock Production and Animal Health

Indonesia's 1967 law (No. 6 on Animal Husbandry and Veterinary Hygiene) has recently been replaced by Law No. 18 of 2009. The H5N1 epizoosis brought the failings of the 1967 law into focus. The 1967 law, for example, did not cover an outbreak situation, nor did it give the government the legal right to cull infected poultry. It is widely acknowledged that both the national and regional governments of Indonesia's ten-year old democracy are inexperienced

in the technicalities of legal drafting, not only with respect to matters of animal health; and Indonesia's extensive programme of decentralisation and regional autonomy complicates the legislative situation further.

Through interviews with parliamentarians, legislators, their advisors, civil servants, lawyers, commercial stakeholders and experts who were involved with the process, the study has investigated how the law was drafted. Who drove the process? Who made inputs to it? Who had stakes in it, what were the areas of agreement and contestation, and in the latter case, whose opinion prevailed, and why? Opinions have been captured and represented as to the appropriateness, competence and practicability of the new law, especially as it may or may not apply and be implemented in the autonomous regions.

– Understanding Biases in the International Response

Today in Indonesia, a handful of conglomerate companies produce around a billion chickens per year. This represents about 80% of national production, and is entirely consumed within the country. Until recently, little attention was paid to industrial poultry production by the organisations coordinating the response to HPAI, and given the mass domestic consumption, producers have had little incentive to adopt international health standards and procedures. Furthermore, the national regulatory structure is weak, poorly enforced, and many companies mix political and commercial connections and practices.

FAO, WHO, bilateral donors and Indonesian ministries alike have long accepted the idea of the inbuilt "biosafety" of industrial production. Consequently, attention has focused on so-called "backyard farming", an outlook that translated into wide-ranging community-based surveillance and response systems, mass communications campaigns, and concerns about the cultural habits of Indonesians with birds. However, it is increasingly recognised that industrial farming can be a generator for animal diseases such as HPAI, given its high concentration of animals and the poor genetic biodiversity.

The study examines the way the "backyard farming" narrative was constructed, when and by what actors – as well as the extent to which, consequently, large industries were excluded, or excused, from the HPAI response effort, attention focusing instead on smaller producers and hobbyists (so-called "Sector 4" in the FAO typology). In this endeavour, the techno-scientific biases of organisations such as FAO have been examined, as well as their organisational culture of working with small producers. Attention has also been given to the incentives large companies face, as well as their sources of power among public sector and other private actors. Finally, some thoughts are offered on how international and bilateral agencies might

adapt their work and concerns to modern industrial agro-business, in pursuing the "One World One Health" agenda.

2. WEST JAVA TO JAKARTA: GLOBAL RISKS FROM A LOCAL MARKET STRUCTURE

In this section, the study investigates the market chains related to poultry production and consumption in and around the mega-city of Jakarta. Special attention is paid to sources of global danger and their connection to local socio-economic factors. The objective is to identify local incentives, blockages and power structures that affect the global community through increased health risks. We examine the large poultry industry in Indonesia, which represents about 1% of total domestic GDP. We suggest that its rapid growth is linked to urbanisation and rising living standards, especially in urban areas such as Jakarta. Then, we show how its shape has been influenced by a variety of forces that played out over time, including rising industrial groups backed by foreign capital and ownership, and interventionist policies designed to preserve rural employment. This has led to a unique industry structure, which lays half way between a fully integrated industrial one and a pre-industrial one – a configuration that increases health risks and introduces dysfunctional incentives for a variety of actors when zoonotic diseases emerge. As is conventional in the modern poultry industry globally, the Indonesian industry can be divided into three sectors: the "upstream" sector, providing the inputs, such as feed, chicks, and pharmaceuticals; the "on-farm" sector itself, where the birds are "grown"; and the "downstream" sector that includes slaughterhouses, distributors and markets.

Mega-chicken: a Massive Industry Facing Recurring Health Risks

The Special Capital Region of Jakarta is the national capital of the Republic of Indonesia, the seat of central government, and the main commercial and administrative centre of the country. Like many Asian urban areas, it has gown rapidly over the past 50 years, and in 2010, with an estimated population of around 13 million people,[23] it is considered to be the third largest city in Asia, after Tokyo and Seoul. National population increase accounts for part of this growth, but again, like many other countries, Indonesia is experiencing rapid urbanisation, and Jakarta is at its centre. The 2000 national population census recorded 42% of the population as being

[23] http://books.mongabay.com/population_estimates/2010/Jakarta-Indonesia.html [accessed 20 April 2010].

urban, up from 22% in the 1980s. This growth of the conurbation was recognised in 2000 when the term “Jabodetabek” (made of the first two or three letters in the names of its constituent municipalities: Jakarta, Bogor, Depok, Tangerang, and Bekasi) was officially recognised for the metropolitan area surrounding Jakarta, which includes five municipalities and three regencies (see Map 1). In 2010, the population of this area is considered to be around 30 million people, up from 17 million in 1990 (BPS DKI, Jakarta).

Map 1 – “Jabodetabek” (Jakarta, Bogor, Depok, Tangerang, and Bekasi)

Source: www.streetdirectory.com.

Ranked 107 out of 177 countries in the UNDP's 2007/2008 Human Development Index, GDP per capita for Indonesia stood at US$3,471 in 2006 (PPP, current international dollars) with 40% of the population living on less than $2 a day (Asian Development Bank, 2008). In Jakarta, however, GDP per capita is estimated to exceed US$5,000.[24] Many analysts correlate income with the level of chicken consumption,[25] suggesting an explanation as to why consumption is so high in the region. Normile and Enserink (2007, p.448) suggest that between 300,000 and 400,000 chickens are consumed each day in Jakarta, and Muhammad Azhar, the Agriculture Ministry's coordinator for bird-flu control, "around 700,000".[26] However, several interviewees suggested that the figure is probably closer to one million.[27] The majority of these birds are brought live into the city on small trucks to be slaughtered and sold at 350 or more traditional markets. In April 2010, new regulations are due to be enacted prohibiting the transport of live birds into the metropolitan area – while current slaughtering facilities only so far provide for only some 300,000 birds.

The Indonesian experience fits the common pattern of rising incomes and urbanisation leading to increased consumption of animal protein, and reduced consumption of rice and other starches (Delgado *et al.*, 1999; Gulati *et al.*, 2005). Table 1 shows that the production of poultry and eggs has been rising faster than those of other meats. As a largely Muslim country, chicken is Indonesia's favourite meat. In 2005 national consumption was around 4.45kg per head, compared with beef, which is more expensive, at 2.4kg and pork at 2.6kg. Consumers prefer relatively small birds with an average live weight of around 1.5kg (USDA). Imports in 2005 were minute at 2kt, and exports zero: the HPAI outbreak notwithstanding, Indonesia is not considered to have the sanitary standards required for export to the European Union and Japan (Vanzetti 2007, p.4). These levels of consumption are regarded as very low

[24] The Economist 21/9/2009: A special report on Indonesia.

[25] http://www.sieradproduce.com/EN/newsandactivities/news/Pages/SIERAD%E2%80%99SBUSINESSWINGSARESPREADING.aspx [accessed 20 April 2010].

[26] 15 October 2008, http://www.thepoultrysite.com/poultrynews/16152/ministry-outlines-plans-for-poultry [accessed 20 April 2010].

[27] Interviews, Jakarta 12 and 13 February 2010

compared to neighbouring Malaysia, with a similar diet and culture, which currently consumes around 34kg annually, and the prospects for the industry are considered bright.[28]

Table 1 - Indonesia Production (thousand tonnes)

	Pigs	Cattle	Poultry	Eggs
1995	572	312	876	736
2007	597	418	1,356	1,298
Average annual growth	0.4%	2.5%	3.7%	4.8%

Source: The State of Food and Agriculture, FAO 2009, p.126 & p.130.

The poultry industry turnover is estimated to be Rp65 trillion (approximately US$6.5 billion) annually, which is about 1% of GDP. The industry is estimated to employ around 2.5 million people, suggesting that around 10 million people are dependent on it (assuming there are 4 people per family). Poultry production in Indonesia varies from highly technical commercial breeding operations to hobby and subsistence farming, the latter generally involving scavenging birds living uncaged around homes. KOMNAS FBPI (the now disbanded national committee for avian and pandemic influenza) figures suggest that around 1.2 billion chickens are consumed each year nationally.[29] Some 70% of total poultry population is located in Java. Extrapolating from 1997 numbers (the last year for which aggregate figures are available), Simmons (2006, p.437) suggests a total national poultry population of just under two billion, divided into 68% broilers, 22% native chickens, 7% layers, and 2% ducks. In 2008, the Indonesian broiler population was estimated to be 899 million birds, an increase on 889 million birds in 2007, and 840 million in 2006.[30] The total population of "*kampung*" (village) chickens in Java is estimated to be 106 million birds, which are reared by 60-70% of Java's population of 135 million (Sumiarto & Arifin, 2008). "*Kampung"* chicken is considered superior in taste to intensively raised birds, and is significantly more expensive. Most

[28] Kompas, 13/02/2010, http://bisniskeuangan.kompas.com/read/2009/02/16/07205589/Charoen.Pokphand.Indonesia:..quot.An.Integrated.Poultry.Related.Company.quot, [accessed 20 April 2010].

[29] KOMNAS FBPI Presentation, 10th National Veterinary Conference of the Indonesian Medical Association, Bogor, 20 August 2008.

[30] In 2006, the population was divided as follows: broilers - 69%, native chickens - 21%, and layer chickens - 7%. Almost half (47%) of the broiler population is located in West Java, with 18% located in East Java, 7% in Central Java and 5% in North Sumatra. Indonesia Poultry And Products Poultry Annual 2007, USDA - http://www.thepoultrysite.com/articles/901/indonesia-poultry-and-products-poultry-annual-2007, [accessed 20 April 2010].

scavenge during the day and are kept inside at night, but small numbers are managed semi-intensively.

Around ten conglomerate companies control all industrial production, with three responsible for 70% of the market (Sumiarto & Arifin, 2008, p.10). These "integrators" combine husbandry with feed and equipment production and distribution, and are often involved in downstream slaughtering and processing activities. Most integrators operate at least partially under sub-contracting schemes that see poultry, feed, day-old chicks and waste products widely transported. Integrated producers dispatch roughly 30% of their output through modern processing and slaughterhouses, which generally sell to restaurants, supermarkets and food processors, and 70% to traditional outlets (Fabiosa 2005, p.5). In addition to this 70% of commercial production, all independent production goes to an estimated 13,000 live poultry markets, or is consumed at home. In Jakarta, live markets account for 80% of consumption. Women, who usually provision the household, consider it safer to purchase a live bird and have it slaughtered than to buy a dressed bird (Padmawati & Nichter 2008). For many, "halal" slaughter is important. Supermarkets are not trusted, especially as suppliers of frozen chickens, which many think have been injected with water, or are birds that did not sell when fresh.

The Indonesian government declared HPAI infection to the OIE in January 2004 and on 3 February 2004, the Minister of Agriculture declared avian influenza a "dangerous disease".[31] Between August 2003 and January 2004, at least 600,000 chickens reportedly died of the disease in 17 of Central Java's 35 regencies.[32] Some 10.5 million birds were reportedly lost in 2004 due to disease and culling,[33] and during peaks of infection in February/March 2005 and 2006, recorded monthly poultry deaths were 530,000 and 650,000 respectively[34] with losses due to disease or culling estimated to be between 15% and 20% of all poultry stock. Almost every actor in the poultry marketing chain experienced severe effects (Winarso, 2009). In 2004, the combined effect of 50-60% lower prices and 40% lower sales volumes meant income reductions of 70-80% for traders, and employment opportunities dropped by 40% on larger poultry farms.[35]

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[31] Decree n° 96/Kpts/PD.620/2/2004.

[32] Jakarta Post, 4/10/04.

[33] Avian Influenza Control Campaign 2006-2008, An Indicative Outline, Ministry of Agriculture, December 2005:6.

[34] Presentation: "HPAI Vaccination Program in Indonesia", Ministry of Agriculture presentation, Scientific Conference on Vaccination Verona Italy, 20-22 March 2007.

[35] Committee on World Food Security, Thirty-second Session, Rome, 30 October–4 November 2006.

The poultry business has always been considered risky, especially for small producers. Even before the HPAI outbreak, on average 5-10% of birds were lost to illness, most notably Newcastle disease (ND), another viral disease of poultry. Such birds are (or were) often eaten or sold to petty merchants who visit farms (Padmawati & Nichter, 2008). Among farmers, many still cannot distinguish between AI and ND (and even veterinarians must depend on a laboratory test). In early 2010, a farmer interviewed for this study declared: "*I am still confused about AI, when I saw it on television, the symptoms were similar to ND. Therefore, I still do not know if AI is real or not*".

Upstream Structure: the Industrial Concentration of Breeding and Feeding

The upstream sectors of the poultry industry are controlled by a handful of large companies that make most of their profit here, but nevertheless are involved in the rest of the market chain so as to "keep the flow moving", as an informant put it. Meanwhile, as we shall see, these conglomerates have little incentive to internalise health risks that are currently spread to numerous other stakeholders at the farm and downstream levels.

The upstream sector includes: (a) breeding and the production of day-old chicks (DOC); (b) feed production; (c) veterinary medicine production; and (d) specialist poultry farming equipment production, such as feed and drink equipment, and disinfection equipment. The last two sectors are outside the scope of this analysis and are not addressed here – most of their actors in Indonesia are importers and distributors. Although the large-scale veterinary pharmaceutical market in Indonesia is considered to have started on the back of the poultry business, veterinary pharmaceuticals are estimated to only reach 2-5% of the total production cost of poultry farming.

Breeding

Selective breeding produces the pedigree, or pure line strains, whose offspring form the grand parent stock (GPS) of the birds eventually reared for meat, which are referred to as final stock (FS). This activity is carried out by only a few specialist global breeding companies. According to one respondent to this study, "All the commercial broiler genetics in the world are in the hands of two companies" and Indonesia relies on imported breeding stock from European countries and the US. Between 2002 and 2006, around 330,000 GPS DOC were imported annually. Five strains of broilers are currently grown in Indonesia, namely Cobb, Ross, Hybro, Hubbard and Arbor Acres, and nine companies import GPS. Eight are situated in West Java and one is in East Java. A further 74 companies, spread widely across Indonesia, are engaged in the procurement of parent stock (PS). Between 2002 and 2006, around

470,000 PS chickens (hens only) DOC were also imported annually. The total parent stock population in Java is estimated at about 7 million, and production is estimated at 4.5 million per week for layers and 16.5 million per week for broilers. In Java alone, around 26 million birds per week are produced.

All eggs laid by parent flocks are collected and delivered to hatcheries where they are incubated at a controlled temperature and humidity. The result are FS DOC. The number of PS chicken produced in the country, or imported, crucially affects the number of FS ultimately produced. If too many PS chickens are produced (or imported) it will lead to oversupply of FS. The price of FS DOC therefore fluctuates and PS producers manage prices by destroying eggs when faced with oversupply. According to Data Consult, Indonesia's total installed capacity is 40 million DOC per week, or over two billion per year. In 2008, production of broiler DOC increased to 1.2 million from 1.1 million in 2007, with an increase also recorded in the production of egg layer DOC from 64 million in 2007 to 68 million in 2008. This increase in production, however, brought on a problem. The domestic market was oversupplied by 27% in mid 2009, and prices fell.

Feed

Unlike the laying chicken farm business where feed is often mixed on site, few broiler farmers make their own feed, and according to Data Consult, feed accounts for 70% of the total production cost of broiler farming. Over the past five years, feed production has increased 8.4% annually on average.[36] As Table 2 shows, a small number of large companies dominate this sector. The feed mill companies distribute their products widely through local poultry shops, but their largest provision goes to "plasma" farmers operating under contract (see below) to "nucleus" companies, which are usually part of the same conglomerate groups producing the feed.

Table 2 - Indonesia Poultry Feed Production – Top Five Producers (2008)

Rank	Producer	Production (tonnes)	Percentage of total
1	Charoen Pokphand	2,600,000	30%
2	Japfa	1,700,000	15%

[36] *Market Intelligence Report on Animal Feed Industry in Indonesia*, May 2008. Source: http://www.datacon.co.id/animal%20feed%20industry.html [accessed 20 April 2010].

3	Sierad	800,000	12%
4	Cheil Jedang	750,000	7%
5	Wonokoyo	600,000	5%
Total		6,450,000	69%

Source: Globe Asia August, 2009.

Feed is produced in areas close to where chickens are farmed. In 2008, Indonesia had 42 feed factories in operation. From a low base in the 1980s, imports of soybeans and corn quadrupled with the expansion of the poultry industry between 1991 and 1996. Indonesia now imports over one million tonnes a year of each of the major feed ingredients, and roughly 80% of imported corn is used for the production of poultry feed (Fabiosa *et al.*, 2004, p.1). In 2000, imports came mostly from the US (84% market share), Brazil and Thailand (8% each). Feed costs in Indonesia are consequently higher than elsewhere. In Europe or the US, feed typically comprises 60-70% of the costs of egg layer production. In Indonesia this ratio is usually above 90% (Kristiansen, 2007, p.60). However, large feed producers also control these imports, which they distribute.

On the Farm: the "Inti-plasma System" and its Associated Risks

Broiler farming is the activity of growing DOC until harvest for meat at between 32 and 40 days. This business is conducted by hundreds of thousands of enterprises all over Indonesia, ranging from small operations with hundreds of birds, to those with hundreds of thousands of birds. With a cleaning and resting period between the 28-plus day production period, around six cycles are typically accomplished each year. Two main forms of production exist: (1) independent farmers, and (2) nucleus-plasma partnerships. As mentioned below, there are historical reasons for the dominance of the latter, which see the *plasma* (the farmer) providing the land, sheds and labour, and the *nucleus* (meaning enterprises in upstream industry) providing DOC, feed, veterinary medicine and technical guidance on credit. The "big five" integrators are PT. Charoen Pokphand Indonesia, PT. Japfa Comfeed, PT. Wonokoyo Rojokoyo, PT. Sierad Produce, and PT. Leong Hup (Kristiansen, 2007). Sumiarto and Arifin (2008, p.10) suggest the first three of these companies have shares of total production equivalent to 27%, 23%, and 19% respectively. All are parts of complex business conglomerates. Fabioso (2005) adds PT. Manggis, PT. Cipendawa Agroindustri, and PT. Cibadak Indah Sari Farm as large producers. PT. Cheil Jedang, a Korean company located in

Indonesia, and PT. Galur Palasari Cobbindo are also reported to be significant players. As an expert explained:

> *"The commercial industry did not arrive here until about 1993. Around 1996 it moved to 'integrated – inti-plasma'. The seeds came from Charoen Pokphand. They developed a vast community of backyard farms, commercial relations with the community. They put their own people into some of these "company farms". In my opinion, this meant that they could reduce investment. They just needed to endorse people. It also moved the social risks, the disease risks, to the owners of these farms."*

In the "inti-plasma" system the farmer is protected from fluctuations in the price of post-harvest chicken by way of a contract with the nucleus. When the market price is higher than the contract price, the excess price become the property of the nucleus; and in the case that the market price at harvest is under the contract price, the nucleus business bears any loss. In most agreements, there are incentive mechanisms for the plasma related to the Feed Consumption Ratio (FCR) and mortality. There are varying forms of contract, but most state that in the event of poultry mortality, the farmer does not get paid.

All the major companies operate significantly in this manner, with small variations. The thousands of plasma farmers contracted with the CP Group (in Java, Sumatra, Kalimantan, Sulawesi, and NTB) are reported to require at least 5,000 chickens. PT Wonokoyo's system is similar, but a farmer is only required to have at least 1,000 chickens. The latter enterprise has developed the partnership system since 1999, focusing on East Java. Sierad has developed partnerships with over 1,000 small farmers in West, Central, and East Java, and of the 1.5 million DOCs it produces per week, some 900,000 are delivered to its plasma farmers with the rest being sold to independent farmers. The company plans to expand its partnership system in order to support its DOC production, which is currently operating at 55% capacity.[37] CJ Feed requires its contract farmers to have 4,000 chickens each and has focused on developing its operations in Banten (on Java's most western tip) and West Java.[38]

Opinions of the "inti-plasma" system vary. One independent farmer says:

> *"In such situations, both parties feel comfortable and it seems like this pattern continues to grow. Among the reasons why many people are interested in partnering as the plasma are (1) it does not require huge funds (2) there is a sense of calm at work because of support by the nucleus party, and (3) it increases the income from the farming of broilers,*

[37] It has secured a loan of Rp225 billion from Bank BNI to finance its business expansion.

[38] Source: http://www.datacon.co.id/Livestock1-2009.html, accessed 20 november 2009.

and reduces the risk due to price fluctuation. But there are also some that say that the partnership breeding at this time is only done by crazy people, because its profit margins are at nearly zero percent, while the energy required and the risk are very big. Another opinion says that the partnership is only for beginner breeders. Once we know the network and its access we should be independent."

Independent farming, according to the same source, is not an easy option:

"In 2007, we were in loss because we needed up to two trucks to feed 5,000 chickens. There was no balance between the price of the feed and the price of chicken, and we could never get any loans from the bank. So we sometimes have to buy our DOC, feed, drugs, vaccines and any other needs on credit, while the partnership farmer never has to think about payment of the production costs."

An international observer further commented:

"Contract farming can and does work. The main issues are: (1) The big companies do not control the whole chain, (2) Legislation supports small farmers, (3) Most profit ends up in the hands of big companies, (4) Risk ends up in the hands of many small farmers."

An international expert further explained the extent to which big integrators and small-scale farming are integrated into a complex and nebulous structure:

"What is called the 'commercial sector', in the form of contract farming, actually reaches right down to include farms made of bamboo. There is an incentive to keep the buildings impermanent. They are then not taxed. The system makes it very difficult. Sectors 1 and 2 – the breeding farms and the properly industrial farms – are quite separate from Sectors 3 and 4, which merge. Sector 4 – backyard framing – is actually very limited in size, but it spreads thinly just about everywhere."

Regarding avian influenza control, an informant from an international NGO active in animal health issues declared:

"In my opinion, the weak link is very much the contract growers. Big companies do not provide them with sufficient technical capabilities. Among the reasons for this is the fact that growers can move to another company. Another is that there is no financial incentive for big companies to help growers improve their techniques and procedures. It is the grower that takes the risk. They are normally paid on feed conversion ratio and if the birds die they get nothing. But what would happen if it were arranged the other way? There would be no incentive for good farming practices. Ideally, the risk should be shared."

It is suggested that contact farming schemes externalise health risks from the nucleus onto the small farmers who are arguably less able to mobilise the appropriate technologies and procedures in response. Another interviewee said:

> *"AI is a general problem. It will stay in contract growing. Can you imagine the investment required by the large conglomerates to move to an own farm system – the land they would have to buy, the buildings and infrastructure they would have to create. Industry does not have this capacity to invest. And then there is concern about the social problem. What would happen to the contract growers?"*

In other words, large integrator companies have low incentives to move out of "contract growing", a system whereby they can avoid the financial risks linked to health hazards, as well as avoid undertaking large capital investments. In any case, they already fully control the feed sector which accounts for a large proportion of production costs. On this segment, large companies make significant profits by selling their inputs to contract growers. For instance, 75% of the profit of PT. Charoen Pokphand comes from poultry feed, 15% from DOC, and less than 9% from processed chicken.[39] In a way, the relationship between contract growers and industrial nuclei could be seen as one of insurance against fluctuations in market prices – an insurance that is expensively paid for by contract growers. As an informant explains:

> *"Chickens are often sold at low prices, but DOC are sold at high prices. Big companies get big profits from DOC and feed, so they do not need to bother about profit from chickens. They can bear small losses and they only have to gain from betting on chicken prices."*

Indeed, big companies provide feed, medicines and DOC to contract farmers, and the contract stipulates the price at which the 35 day old chicken will be sold. Consequently there is no market price risk for the farmer (over the cycle). The contract also stipulates the prices paid for the inputs provided by the big company. Once the product is grown, the big company helps the farmer to sell the chicken. Hence, the company sells the chicken to a variety of brokers and intermediaries. There may be several intermediaries involved before the chicken reaches the market or the restaurant table. The big company takes none of the production risks (including disease). If the production is lost because of disease, then the producer becomes indebted towards the big company – and will repay through a recalculation of its contract price over several production cycles. The price is unpredictable and highly variable, but big

[39] The Jakarta Post, 20/5/2009, http://www.thejakartapost.com/news/2009/05/20/charoen-pokphand-higher-sales-prices-double-q1-profits.html.

producers are looking to make a profit over the year, not per cycle. They do not mind gambling as their money is already made on DOCs and feed. In other words, they can gain twice – once on DOCs and feed, and then on profit from birds. They have no incentive whatsoever to change the system or modernise.

Downstream Structure: Spreading Health Risks Further

Commercial activities in the downstream sector start with live chickens being moved from the farm. The timing of this is critical. Indonesian consumers prefer smaller birds, and birds kept on the farm are not only continuing to grow but are consuming expensive feed and subject to disease risk. Birds may be moved directly to public markets, to "*Rumah Pemotongan Ayam"* (RPA – poultry slaughterhouses), or to a processing company, which is often within the nucleus contractor group holding. "Traders", "distributors", or "brokers" ("*Tengkulak"*), a categorisation that merges, are crucial in this process, as is the mechanism of the Delivery Order (DO). Essentially this is a paper "chit" which allows the bearer to remove a specified number of birds, usually of a specific weight, from the farmer's shed.

Collectors usually obtain a DO from a broker, but may also obtain one directly from the nucleus company. Generally, collectors will take only a proportion of the grown birds from a farm using a small pick-up truck to move them to their own bases (also known as "collector yards"), where they are prepared to hold them for up to five days. Based on capacity, collector bases can be divided into three classes: (1) large bases with a turnover of over 5,000 chickens per day (2) middle-sized bases with a turnover of 3,000 to 5,000 chickens per day and (3) small bases with a turnover of 500-3,000 chickens per day. Some bases form part of facilities owned by slaughtering houses, but most are only prepared to hold the birds before selling them on live. In and around Jakarta, Poultry Indonesia magazine suggests that the number of "collector yards" totals over 277 units with many situated in residential areas.

Slaughtering

There are clear differences between "*Rumah Pemotongan Ayam*" (RPA – poultry slaughterhouses) and "*Tempat Pemotongan Ayam*" (TPA – poultry slaughterplaces). Whilst an RPA is generally a dedicated building with a capacity of 10,000-15,000 head per day, a TPA is generally a room or a small structure located within or adjacent to a market with a capacity of only 300-600 head per day. An RPA will generally have a wastewater treatment installation, a business licence, and separate "clean" and "dirty" rooms. It may have cold storage facilities and will generally serve restaurants, fast food chains and the processing industry producing chicken nuggets, sausages, etc. These downstream outlets are often part of

the nucleus contractor group holdings. In contrast, TPAs are usually small, shabby and lack the most basic hygiene services. Generally, wastewater treatment facilities, business licences and separate "clean" and "dirty" rooms are lacking. There are typically only a few simple tools such as a "*pisa*", where chicken is cleaned, a small concrete tub to put the freshly slaughtered chicken in so the blood does not scatter, and a stove to heat water used in the feather removal process. Poultry Indonesia magazine puts the number of traditional chicken slaughterhouse in Jakarta at 957 units. An international expert observed:

> *"You can start a slaughterhouse anywhere as long as you have a permit from the Bupati [local leader]. Sometimes guys get paid just to move their operation [which may bring disease in] somewhere else. The relationships between the government and the companies – and these are very local relationships – boil down to money."*

As another informant explains, increased health risks are associated with TPA:

> *"In Java slaughterhouses, the feather follicles – a known transmission risk – go straight into the public water way. This would be okay if it was at a village scale. But here there are industrial quantities of birds coupled with pre-industrial slaughter and marketing systems."*

Retailing

Retailers are typically located in "traditional" wet markets, and most are prepared to receive live birds. Slaughtering services are purchased on site (see TPA above), with payment being around Rp30,000 to Rp40,000 for a period that usually extends from 2am to 6am. Carcasses are then placed on open tables for sale. Retailers need to predict the number of carcasses they will sell. There are generally no cold stores or freezing facilities, and consumers are prejudiced against frozen meat, which is often suspected of being an unsold carcass from the previous day. Smaller retailers will also take chicken carcasses from larger retailers in large plastic buckets to sell from carts, or other shifting locations. These smaller retailers typically sell more cheaply because they do not have to pay market fees and are prepared to accept a lower price. This can cause conflict. The capacity of each agent varies, but on average a market stall can expect to move hundreds of chickens per day, and a "bucket" trader one or two dozen. Other small traders, with a typical capacity of 25-30 head per day, will slaughter in their own homes and bring the carcasses to be sold on the fringes of the traditional wet markets. Awareness and understanding of H5N1 is low in this sector. Many merchants seem to doubt the transmission of H5N1 from poultry to humans. Few are aware of symptoms of infection in birds or humans. When asked why they did not wear gloves and masks, many of them said that it would "scare off customers".

Middle people

Some very detailed studies of poultry market chains in Indonesia have been carried out,[40] but none examine the import role of the "brokers" or "middlemen" ("*Tengkulak"*). Essentially, these intermediaries, who operate in other areas of agriculture such as vegetable farming, provide liquidity for the system and make significant profit from this activity. As the trader or distributor has no capital to pay the farmer for the market-ready birds, he will seek a Delivery Order (DO) for a certain number of birds (usually of certain weight), which is signed by a broker and given to the farmer. The distributor will then collect the birds and move them (through a number of stages) to the market. He may well wait there until the end of the day when the retailer, who also lacks liquidity, has sold the product and can pay the distributor (or his agent). In due course, the distributor will return to the broker to settle his debt. In the meantime, the broker will have paid the nucleus company for the birds removed, or assured it that it will be paid. Typically, a broker makes Rp100-200 per kilo on a contract of 10,000 birds, a credit charge that adds up to between 1% and 2% for one week's credit. These rates are arguably close to usury, but the system has no incentive to change.

There are also other reasons why the brokers are often hated by farmers. As one explained:

> *"Brokers often do intrigue, for example in the morning they dropped the price to Rp8,000/kg, when they knew the real market price at that time was Rp9,000. They deliberately sold at a loss, so that the buyer would inform the other distributors of the Rp8,000/kg price. This meant that all the potential buyers are giving the same price at other farms. Under these conditions the farmers inevitably have to sell at Rp8000/kg."*

The absence of commercial banks from the production chain is striking. They do not provide the "float" that would help growers and traders to pay in advance what needs to be paid. Thus, brokers take advantage of this market flaw, charging high prices and without providing the full range of financial services – for instance, they do not provide credits for real investments. As a specialist journalist explained:

> *"A big problem of the industry is the lack of investment funds. Banks give money to big companies, not to farmers."*

[40] See for example the "Poultry Market Chain Study in Bali" by Made Mastika (FAO: OSRO/RAS/602/JPN) and the "Poultry Market Chain Study in North Sumatra" by Albiner Siagian, Philipus Sembiring, Zulfikar Siregar, Ma'ruf Tafsin, Nevy Diana Hanafi, Rasmaliah, Dwi Suryanto, and Rosdanelli Hasibuan (FAO: OSRO/INT/501/NET).

Meanwhile, as another interviewee put it, "readily available cash payments make the nucleus businessmen prefer to do business with the broker", thus ensuring the perpetuation of the system.

Continued Health Risks and Frozen "Modernisation"

What emerges from these considerations is the fact that the Indonesian poultry industry is very much "frozen" at a given development stage, stuck between fully integrated industrialisation and pre-industrial traditional methods. The sheer scale of the industry and the interconnection within it of two worlds – the industrial and the pre-industrial – is arguably what poses a major health challenge for the nation as well as for the international community.

To start with, it is now increasingly acknowledged that the origin of HPAI in Indonesia is to be found in large industries. As an observer commented:

> *"We would not have this problem were it not for the big companies. The problem started in China where foraging ducks, in their natural habitat, come in contact with large numbers of poultry. A virulent variant of the virus moved from one duck to one chicken and was given the opportunity to propagate among dense industrial poultry. Never before in history was there a set of circumstances which gave the virus this opportunity. This is what happened in China, and this situation where it arose still persists."*

As one interviewed expert explained:

> *"In high animal density environments, such as big farms, you get far greater concentrations of virus particles and the virus gets the opportunity to mutate more and more. This contributes to making vaccines ineffective. There is evidence that vaccines that were effective five years ago are not effective now… In Laos, there are no big farms – and we observe much less of a problem with AI."*

However, as another observer put it:

> *"The irony of the story is that big farms and the big industry are not only the origin of the problem, but also its solution… In an ideal world, we would go back to a pre-industrial age. Then this problem is not there any more. But production on an industrial scale is nowadays inescapable, given human population growth. We can't remove the industrial food production. Thus, you have to properly industrialise the whole chain, you cannot keep half of it at a pre-industrial level. Today, the methods of transportation, slaughtering and marketing are bad in Indonesia… Half of the industrial techniques have been adopted, but not all. You have to make it all industrialised."*

This view is of course debatable and would seem to contradict some modern trends towards more organic products and other more "traditional" production methods. Still, the spread and endemism of AI appears to be the result of the interaction and integration of two radically unbalanced production systems, on a very large scale. As an international expert added:

> *"The health risk is embedded in the [inti-plasma] system. In developed countries, they have applied principles of industrial production to animals, with high level of biosecurity (widespread antibiotics use, etc.), but in Indonesia these principles are not fully applied and in fact you cannot fully apply them: big companies cannot out-compete the contract growing system."*

This leads us to conclude that if proper incentives and market structure guidelines are not provided by the government, little will change in the "inti-plasma" system. For now, this system benefits large companies as well as brokers who ensure that the former are reliably paid cash at every stage, while heavily charging farmers for this "service". In such a system, no significant capital investment is taking place at the production stage, or even down the market chain in distribution channels.

Explaining the Situation: "Stop and Go" Government Intervention

Historically, the growth of the "inti-plasma" system, which spreads health risks to actors that are ill-equipped to deal with them, directly relates to rural socio-economic policies implemented by the government in the form of regulatory "stop and goes" which have all eventually benefited the larger companies. Yusdja *et al.* (2004) divide the history of the poultry industry in Indonesia into a number of separate periods.

In the first period, prior to 1970, poultry production was a sideline or a hobby, remote from market-oriented enterprises. In the second period, from 1971 to 1980, the government implemented new policies designed to attract foreign investment for the agriculture sector, especially chicken farming. The objective was to accelerate the sector's growth, access technology from developed countries, and increase rural employment opportunities and incomes. Subsequently, Japanese, US and Thai companies established feed and equipment enterprises, as well as hatcheries and broiler farms. Investment, however, grew more rapidly than consumption, and small-scale enterprises suffered as fierce competition arose. Different types of government licences created separate feed, cultivation and processing sectors; the feed industry concentrated around Jakarta, not in the countryside; and tariff-free imports of feed raw materials (corn and soybeans) meant that domestic production was not stimulated. The largely foreign feed companies then began large-scale chicken farming operations to

extend the market for their own products. However, production again exceeded demand and small-scale businesses were badly hit. The government felt that it needed to intervene to protect rural employment.

In the third period, from 1981 to 1984, popular protests and public pressure amid increasing unemployment led to Presidential Decree No. 50/1981, which restricted layer chicken businesses to 5,000 birds and broiler businesses to 750 birds per cycle. As a result, large companies divided their operations into smaller units, or diverted to other agricultural operations. The government initiated an extension programme, "*Bimas Ayam*" ("Guidance Chicken"), made US$50 million of credit available to small farmers, and ordered Bulog (the national logistics agency) to monitor and stabilise egg and meat prices, promote cooperatives, and improve marketing. However, the policy failed. Such small-scale farms proved economically unviable and the government proved unable to control the market.

From 1984 to 1988, in response to the failure of the previous policy, the government reformed the structure of the poultry industry in the shape of the PIR (*Perkebunan Inti Rakyat*). The objective was to support both large-scale and small-scale operations. It introduced the nucleus and plasma ("inti-plasma") form in which the nucleus supplies inputs – DOCs, feed and pharmaceuticals – to farmers on credit and buys the product back from them. Conceptually, in such a scheme, the farmer is protected with a favourable price, but the reality is different. PIR proved unsustainable and many small farmers went out of business (Rusastra *et al*., 1988). At the end of 1987, the government invited the entire poultry industry to a national workshop. It was agreed that whole-scale reform of the industry was required and that firm action needed to be taken against "stubborn" large operations (p.28), but the resulting council failed to formulate or implement any programmes.

From 1989 to 1996, the industry grew without any government control. Bulog legalised monopolist imports of feed raw material such as corn, soybean and fish meal, so that three large "oligopolistic" companies came to control feed and DOC supplies (p.29). In mid-1990, Presidential Decree 50/1981 (limiting the size of poultry businesses) was cancelled. New regulations (Presidential Decree 22/1990) lifted licensing requirements on farms with less that 15,000 birds, set new licensing regulations on large farms, and required those backed by foreign investment to export 65% of production. Big businesses took advantage of these new laws by dividing their operations into units with less than 15,000 birds. 1996 again saw the threat of bankruptcy hanging over thousands of small broiler farms (Yusdja, 1996). The high reliance on imported raw materials – technology, investment, DOC, feed, feed raw materials, medicines and expertise – only grew further. "The Indonesian territory [had] become an

extension of the owners of capital and livestock producers in other countries. Indonesia only provides a place and labour" (p.30).

From 1997 to 2003, the Asian economic crisis hit the country badly, leading to social and political unrest. Meat demand dropped catastrophically and a massive exchange rate increase[41] affected import prices for feed raw materials, DOC, and livestock medicines. Poultry production declined by 50-60%. In 2000, Presidential Decree 22/1990 was revoked, thus ending government intervention in setting scales. The fragility of the industry was recognised, along with the fact that 20 years of government intervention had not only expensively failed, but had also contributed to the formation of monopolistic/oligopolistic market structures for feed and DOCs and for the purchase of poultry products – while continuously fragmenting the production system into countless relatively small units, thus multiplying the propagation of animal health risks.

Since 2003, the industry has grown rapidly under the control of large-scale oligopolistic companies. The case for government to set policies is at "stalemate" and its influence on such large private entities seems in any case very low to most interviewees, who emphasised a range of reasons: the high political connections enjoyed by the shareholders of these large companies, including through family links; their capacity to "buy in" key people through passive or active corruption; their capacity to influence the removal of civil servants in central ministries who are not sympathetic to their views; and finally the fact that following decentralisation, the central government has little authority "on the ground" where companies actually operate, while the latter can easily secure the support of local governments through legal or less legal means. One respondent to this study declared:

> *"Now it is just business. The companies have no interest in government and the government has no interest in the companies. In the past there was also a paternalistic attitude. The villages did not have sufficient knowledge to do poultry farming. They needed technical support. Development was driven by the industry. They could just go to an area and start something there. The government did not want to be involved at all."*

This history sheds light on why and how large companies came to dominate the poultry industry, while taking advantage of the continued existence of hundreds of thousands of small farmers. The integration of large companies and small-scale farmers into the "inti-plasma" system is at the root of the generation of many health risks, both locally and globally. The

[41] From Rp2,000 to approximately Rp15,000 to US$1.

current system lacks the means to ensure tools and incentives for much-needed investments and skills development.

Conclusion

The poultry industry in Java is unique in that it combines a fully industrial upstream sector with pre-industrial on-farm and downstream sectors. The broiler chicks may not be infected when they leave the parent farms, but they are then moved into a much less regulated system for growing, and then into an even less regulated system for transport and marketing. The majority of the birds are transported live, slaughtered in tiny units at the edge of markets, with waste running off into community water channels. The very specific shape of the industry has developed as a result of two major series of factors: 1) recurring government intervention, favouring rural employment, but unable to balance the weight and influence of large industries, which took advantage of the social legislation to externalise animal health risks and the need for capital investments; 2) the lack of competitive financial services being delivered to farmers, leading to a dominant and symbiotic relationship between industrial nuclei and brokers, at the expense of farmers. From this, we draw the following:

1. Socially oriented, pro-poor, pro-rural policies, intended to support rural development and employment, can in fact jeopardise the safe management of animal health risk. The inti-plasma system that grew from a combination of badly designed governmental regulations and the arrival of trans-national capital did succeed in a way, but led to a system whereby risk management and productive investment are radically undermined. Here, both domestic authorities as well as the international community need to rethink the balance between pro-poor concerns and health risk management, two agendas that may not ultimately be contradictory.
2. On the whole, the poultry industry demonstrates a short-term profit orientation with little inclination for investment and risk management in farming. Large companies and the brokers – their foremost partners – create significant profits without it being necessary to internalise these needs. The alliance that has developed between large companies and rural brokers is critical to the perpetuation of the “inti-plasma” system. If things are to change, the market flaws that affect the poultry market chain need to be addressed, including the absence of commercial banks that are required to support farmers. As one observer put it: “one of the main problems facing the contract grower is the lack of capital. There is a need to support farmers with micro-credit”. Here, there may be a role for the international community in ensuring that the small-scale

producers, responsible for most of the poultry production in Indonesia, have access to the right amounts of (possibly subsidised) capital so that they can upgrade their facilities and skills and get closer to international health standards.

3. Finally, it is striking to see the slight effect governmental regulations have in practice in the poultry sector. Inspections are almost non-existent and “under the table deals” seem often to empty them of any real impact. In that regard, the hyper-decentralisation of the country has not helped, as it has arguably decentralised “little arrangements” or outright corruption. As poultry businesses provide significant rural employment, their political weight at local levels is also significant, making it even more difficult for local authorities to enforce regulations and controls. Here, the international community may be well advised to reassess its recommendations for decentralisation, especially when it comes to enforcing health regulations on economic actors in emerging countries. From a global governance perspective, the question is how to incite industrial actors to “re-internalise” investments costs and health risk management in contexts where the regulatory environment is lax and public authorities have little leverage upon major economic actors.

3. GLOBAL COST OF A LOCAL POWER CONTEST: LAW 18/2009 AND THE ELUSIVE AUTHORITY OF VETERINARIANS

Our second case study concerns the way that domestic policy making relating to animal health issues functions in Indonesia, and examines the forces that shape the local regulations that carry implications for the international community. One important aspect of the problem is the weakness of the Indonesian veterinary services. Veterinarians – as a professional community – are fighting hard to raise the technical capacity of the country, as well as to gain greater recognition for their professional expertise and authority. As one declared simply, with frustration: "we need authority to implement the norms of OIE".

In order to go into such issues, we look at Law 18/2009 on Livestock Production and Animal Health, which was ratified by the national parliament on 12 May 2009. The drafting process to amend the previous Law Number 6/1967 began in 1978, and has seen a set of complex and dynamic discussions. The H5N1 avian influenza epizoosis, which was declared by the Indonesian government in January 2004, brought the failings of the existing law into focus, and drove some aspects and the timetable of the revision. The failings of the 1967 law, including, for example, the fact that it did not cover outbreaks of infectious animal diseases or give the government the legal right to cull infected animals, have been declared to be the greatest obstacle in tackling the spread of zoonosis in Indonesia, including H5N1. Contestations regarding the new law continue, however, in the Constitutional Court. Three groups have raised objections relating to: (1) veterinary authority (2) the acceptance that "zones" smaller than a country may be declared free of an infectious animal disease and (3) compensation for animals culled as the result of an outbreak of an infectious disease. These three issues are examined below, set against the background of a wider picture related to history and power struggles between various groups.

The Dim Past

Animal health regulation in Indonesia dates back to the Dutch colonial period (from around 1700 until 1945, with interregnums, although it was not until the 20th century that Dutch dominance extended to the boundaries roughly equivalent to those of modern-day Indonesia). One of the most significant contestations in drafting the new law, and in the current challenges to it in the constitutional court, result from this legacy. The ten relevant regulations made by the government of the then Netherlands East Indies almost exclusively relate to animal health, contagious animal diseases - particularly rabies - animal slaughtering, and

veterinary practice. In this period, the term "husbandry" was never explicitly confirmed; instead, the business of breeding and raising livestock was subsumed in a broader range of activities known as "animal affairs" (*kehewanan*). This bias towards the scientific veterinary approach can be seen in other activities of the colonial power. In 1888, a veterinary laboratory was established. In 1905, an animal affairs agency was established, incorporated into the Ministry of Internal Affairs; and in 1908, the Sekolah Dokter Hewan Pribumi (School of Indigenous Veterinarians) was established, which in 1914 became the Sekolah Dokter Hewan Bumiputera. This was the origin of the Faculty of Veterinary Medicine of Bogor Agricultural University (Institut Pertanian Bogor/IPB), now a highly regarded Indonesian university, which between 1910 and 1941 produced 143 graduates.

Following independence in 1945, President Soekarno's government continued to apply the colonial regulations as legal references. Some significant changes were, however, made late in this period. By Presidential Decree Number 75/1966, the ex-colonial Animal Affairs (*Jawatan Kehewanan*) agency was replaced by a Directorate of Animal Affairs (*Direktorat Kehewanan*), which was incorporated into the Ministry of Agriculture. This change was significant. It represents the first waning of veterinary influence and authority and the beginning of the primacy of animal husbandry influences in Indonesia. Further legislation arrived in 1967 with the change of regime from Soekarno to Suharto. Although the colonial laws and regulations were not abrogated, Law Number 6/1967 encouraged the policies related to husbandry intensification and rural development that Suharto's "New Order" regime embraced in support of the rural agrarian masses. In 1968, with reference to the new law, the name of the Directorate General of Animal Affairs was changed to the Directorate General of Livestock and Animal Health (*Direktorat Jenderal Peternakan dan Kesehatan Hewan*). Later, in 2001, the name was transformed again into the Directorate General of Livestock Production (*Direktorat Jenderal Produksi Peternakan*) and then, in 2002, to the Directorate General of Livestock (*Direktorat Jenderal Peternakan*). Today, in the Ministry of Agriculture, there are six Directorate Generals (led by Echelon 1 staff), and only one director (an Echelon 2 position), not a director *general*, for animal health who operates under the Director General of Livestock. An important recent proposal (from the PDHI) is yet another revision of the title of the Directorate General of Animal Husbandry to the Directorate General of Livestock and Veterinary Services. Below we will see that these apparent insignificant changes of nomenclature constituted very significant shifts for the corps of veterinarians, and for their administrative standing – especially in the face of the Ministry of Health which has a Director General, concerned with infectious diseases, including those coming from animals.

Fragmented Governance and the "Big Bang" of Decentralisation

Arguably, one of the greatest complexities of the Indonesian context is created by what the World Bank (2003, p.1) calls a "Big Bang": Indonesia's 1999 decentralisation legislation,[42] the implementation of which began on 1 January 2001. This legislation has transformed one of the most centralised countries in the world into one of the most decentralised. It was a key element in the reform strategy of the IMF, proposed in 1998, and was widely considered essential for resolving the regional and ethnic tensions that resulted from Java's historical hegemony and the policies of Suharto's "New Order". During that period, strict control was exercised to the benefit of the centre through the security apparatus, corporatist controls, and co-optation of the legislature. Public services for the entire country were implemented through a long, hierarchical apparatus that was designed not to meet the needs of the people, but to accord with the strategic interests of central actors and their cronies (Erawan, 2007; Erb *et al.*, 2005).

Change has come in three areas: a direct electoral system, introduced in 2004, made the governors, district heads and mayors representatives of their constituents rather than appointees of central government; local governments were guaranteed authority and discretion in policy innovation, with funding mechanisms put in place to enable regions to fulfil their autonomous functions; and the bureaucracy was restructured to emphasise local delivery. Most significantly, power was not devolved to the provinces, which might only have exacerbated centripetal forces, but to the districts and the municipalities. Consequently, in January 2007, Indonesia comprised 33 provinces and 456 autonomous local governments of which 363 were districts (regencies) and 93 municipalities (cities) (McLeod, 2008, pp.201-202). Reflecting on this fragmentation, an international observer declared:

> *"Hyper-democratisation and decentralisation. Huge transfers of competences and resources to local levels. 60% of the public budget is now in the hands of the local authorities. Fragmentation leads to permanent conflicts. Local authorities do not manage to get the money on the ground. Moreover, the "decentralisation of corruption" is a huge phenomenon."*

This of course impacts animal health policies. As an OIE official recalled during an interview in Paris:

[42] Law No. 22/1999 on Local Governance – revised by Law No. 32/2004 – and Law No. 25/1999 on Financial Balance between the Central and Local Governments.

"The key functions of an animal health policy at the national level are: 1) the legislative authority to seize private properties (animals), the material capacity to enforce property transfers on goods as well as to block movements of goods and persons as needed; 2) the capacity to financially compensate at sufficient levels and homogeneously on the whole national territory. Without this, people will hide animal diseases occurring or will move infected animals to other parts of the country to benefit from better compensation "prices". These issues require a real financial capacity that can be speedily mobilised."

Decentralisation often constitutes a major challenge to effective animal health policies, including in Indonesia. An interviewee declared:

"Decentralisation has had catastrophic effects, notably on the guarantee of the quality of vaccines. Many were bought in China or India, where they are less expensive than those of Western companies but far less reliable. Decentralisation has also undermined the badly needed centralised system of decision making and control. In Indonesia, particularly, there is a lack of a clear national chain of command. This is just as critical for sanitary policies as it is for national defence!"

Decentralisation has, in fact, been affecting health policies throughout the world, including Western countries. An observer commented:

"Decentralisation is an obstacle in many countries. Even the United States, with their 51 states, have had a lot of difficulty to merely know their sanitary situation when faced with H1N1. However, there are also some positive aspects. The problem is to find the right balance between decentralisation and centralisation / standardisation of procedures."

Officially, in Indonesia the responsibility for controlling HPAI falls largely on the autonomous district-level governments, and national guidelines are only implemented when local officials think it is necessary and have the funds and local support to do so. An expert working for WHO in Jakarta commented:

"The governors of provinces have no power. Power is in the hands of the elected district-level representatives (Bupatis). In the old days, there was a top-bottom system with no division."

Another observer reflecting on decentralisation suggested:

"The problem is that today, the national veterinary services in Indonesia are very weak. There is no real national veterinary authority properly established. You have the central government establishing regulations, defining policies, however, provincial government

and district governments do not have to follow policies. Because of decentralisation they are free to carry out their own strategies; there are no legally binding mechanisms."

These opinions were largely confirmed throughout interviews, including by officials working in international organisations based in Jakarta. One lamented for instance:

"Decrees of the central government are not legally binding. Moreover, the political weight of the Directorate General of Livestock is weak."

In the eyes of an OIE official:

"A new animal health law [18/2009] has just passed, but this still does not provide enough regulation. The last law dated from 1967. The new law attempts to provide some re-centralisation but is insufficient. This law needs to be backed by a lot of implementing regulations. It is an improvement on 1967, but still not good enough."

We now look in more detail at this law.

A Long and Winding Road

The process of revising Law Number 6/1967 that resulted in Law 18/2009 began in 1978, with an initiative raised by the National Agency for Legal Development (BPHN) within the Ministry of Justice. Subsequently, however, a team of reviewers from the Faculty of Husbandry at IPB, chaired by Professor Harimurti Martoyo, recommended that there was no urgent need to amend Law 6/1967, but that new government regulations were required to specify the reach and implementation of the existing law (Suprahtomo, 2009, p.6). The matter therefore remained unaddressed until 1983 when the then Director General of Animal Husbandry, Dr. J.H. Hutasoit, held a seminar that resulted in a recommendation to establish a new law to amend Law 6/1967. The stated objective was to achieve this within 25 years. Hence, on 6 July 1994, the first steps on the long and winding road began, with the Minister of Agriculture issuing a letter of decree[43] regarding the formulation of a team that would work towards a paper on the required amendments. By 1995, the team had finished its assignment and presented a draft bill consisting of 11 chapters and 79 articles, and in 2000, a proposal to amend Law 6/1967 was registered in the national legislation programme of parliament.

Prior to the parliamentary sessions, the Ministry of Agriculture called for input from experts and other stakeholders and subsequently held a workshop.[44] Its main result was a further

[43] Decree n° 524/Kpts/KP.150/7/1994.

[44] Safari Hotel, Cisarua, Bogor, from 23-24 October 2002.

change of nomenclature: the Animal Affairs Bill would become the Husbandry and Animal Health Bill, but another more significant outcome was that the Ministry of Agriculture organised two teams – one of animal husbandry scientists to highlight animal husbandry aspects of the revision, and one of veterinarians to highlight veterinary aspects. It was not the first – or the last – time that these two apparently complementary professional groups were to find themselves polarised.

2004 was an optimistic period of transition in Indonesia. Susilo Bambang Yudhoyono convincingly won the first fully democratic direct presidential elections (held in two rounds in July and September 2004), and the Minister of Agriculture, Bungaran Saragih, was subsequently replaced by Anton Apriantono, who had been put forward by the Prosperous Justice Party (*Partai Keadilan Sejahtera* or PKS), a broadly Islamist group best known for its opposition to political corruption (Machmudi, 2008).[45] At that time rumours emerged, which found fertile soil, alleging that the proposed pending Husbandry and Animal Health Bill had been put forward at the behest of the country's large and powerful poultry industry, and was being designed to their order. In particular, a group of breeders, which had merged into the Association of Indonesia Poultry Breeders (PPUI), proclaimed that Charoen Pokphand, the largest poultry conglomerate in the country (and indeed the world) was behind the Bill. The suggestion was that the Bill would deregulate large enterprises to the extent that small breeders would be unable to compete.[46]

Further objections were made by the Indonesian Veterinarian Association (PDHI), which proposed its own exclusive Veterinary Law, wishing to withdraw veterinary medicine from the animal husbandry regime entirely. The new Minister froze, apparently, and discussions of the new Bill were postponed until the end of 2005. When the process was reinstated, inputs were reported to be mainly limited to government agencies, with only a few selected stakeholders invited to contribute. In an interview for this study, an official of the PDHI claimed to have been excluded:

> *"The Indonesia Veterinarian Association (PDHI) has not been included since 2005. We were included only at the beginning, in the year of 2002. In sum, this Law is*

[45] The Cabinet at that time was a coalition consisting of the Democratic Party, the Golkar Party, PKS, PAN, PKB, and PPP. Anton Apriyantono was the representative of PKS.

[46] Interview, 11 January 2010.

excluding the voice of the profession. Only veterinarians who follow the government may participate... Everything is very conspiratorial".[47]

It was confirmed by a ministry-affiliated team member that the ministry was then looking for *"more cooperative"* stakeholders.[48]

On 13 February 2007, President Yudhoyono ordered the submission of the Husbandry and Animal Health Bill to Parliament.[49] The Fourth Commission of the Parliament, which is concerned with agricultural matters, then launched a working committee to take the Bill forwards, and a number of public hearings were held during the session that started in July 2007, which included input from a range of stakeholders. Some informants involved in the hearings, and the discussions that went on around them, say that both political and economic transactions occurred in order to promote or relegate certain articles.[50] The sanctions proposed, for example, were controversial in the business community, which claimed that too extreme penalties would inhibit or destroy the industry. Import policy, and how zone-based or country-based systems would affect it, was another hot topic (see below). Despite these objections, after a series of lengthy discussions and debates, the Bill passed into law on 12 May 2009.

Locating Veterinary Authority

The momentum behind the making of Law 18/2009 shares some similarities with the forces that lay behind many of the colonial regulations directed at animal affairs in the early 20th century. Regulation then was largely driven by the arrival and subsequent spread of foot-and-mouth disease (FMD)[51] in 1887 and rinderpest[52] in 1897. In the early 21st century, the significant drivers have been SARS and HPAI, and the 2010 pandemic of H1N1 "swine" flu has emphasised the global threat of zoonotic disease, if only by its popular nomenclature. In Indonesia, more badly affected by HPAI than any country in the world, the disease has been in the headlines since 2003, and has claimed the lives of 135 people out of 163 confirmed

[47] Interview, 12 January 2010.

[48] Interview, 11 January 2010.

[49] Letter number R-10/Pres/2/2007.

[50] Interview, 11 January 2010.

[51] Foot-and-mouth disease is a highly contagious and sometimes fatal viral disease of cloven-hoofed animals.

[52] Rinderpest, sometimes referred to as cattle plague, is an infectious and deadly viral disease of cattle and buffalo.

cases – a remarkable case fatality rate of 82%.[53] The human dimension of the disease, and the potential of the influenza virus to reassort and mutate, has meant that concern has extended beyond the national borders of the affected countries into some of the most powerful corridors in the world.

Following an initial unwillingness to acknowledge the H5N1 outbreak (see below), the Indonesian Minister of Agriculture officially reported to the OIE on 25 January 2004, and on 4 February 2004 he announced the creation of a team chaired by a veterinarian to address it. On November 2005, the Minister revised the team structure and replaced the veterinarian chair.[54] This move offended the veterinarian corps, which had assumed that as professional animal health specialists they would have authority, and leadership, in tackling avian influenza. As we shall see, this was only the tip of an iceberg of contestation between the veterinarians and husbandry scientists.

The root of the problem is that the corps of veterinarians feels that its rigorous science-based approach has been subsumed within a looser, more commercially orientated, animal husbandry regime; that in Indonesia, veterinary medicine science is obliged to support animal production services rather than regulate them. This is one reason why veterinarians historically have preferred the colonial regulations, which gave higher acknowledgement to their authority. In 1995, when Law 6/1967 was under review, the veterinarians consequently proposed the nomenclature of the "Animal Affairs" Bill. They believed that this nomenclature was more neutral, and would give them more opportunity to have influence. Then when the 2002 workshop restored the previous nomenclature of the "Husbandry and Animal Health" Bill, their challenges became more strident, and persistent debates relating to the relationship between "cattle" (*ternak*) and "animal" (*hewan*) arose among fundamentalist elements of both scholarships. One veterinarian said:

> *"Please give me a logical answer: are animals a sub-set of cattle, or are cattle a sub-set of animals? I am sure the answer is that cattle are a sub-set of animals. Yet the government said no!"*

Against the above-mentioned argument, a husbandry scholar who took part in drafting the Husbandry and Animal Health Bill stated:

> *"In the former draft of the Animal Affairs Bill (RUU Kehewanan), all animals were treated as equal. An ant has an equal position with a cow. But in discussing the*

[53] http://www.who.int/csr/disease/avian_influenza/country/cases_table_2010_04_09/en/index.html.

[54] Emi Diah Puspitoningrum Sutrisno Putri, *"Globalisasi Penyakit dan Dokter Hewan"*, Detiknews, 9 July 2008.

Husbandry and Animal Health Bill a question was raised: why is husbandry given priority? Are cattle not just a part of the animal world? My answer is that cattle should be given priority because cattle are the most important animals for human beings."

In this context, we will notice the tension between what Duval calls productive and structural power. The veterinarians feel that they need to identify themselves as part of the regime of medicine, and beyond that they seek institutional power with politico-legal influence. One agenda is to improve the social and economic status of the veterinarians. Among Indonesian society, the title of doctor has social as well as academic status. Many veterinarians interviewed for this study were keen to stress that as well as being a scientist, a veterinarian – an animal doctor – is also a professional with ethics that lead to independent thought and action, free from personal and external interests. These discourses related to "doctor," "professional," and "independence" are echoed persistently by the veterinarian corps in Indonesia, while husbandry scholars are sometimes referred to by them as "political" or "entrepreneur" and thus "not independent". Husbandry scholarship is often labelled by the veterinarians as only equal to nutritional scholarship within the human medicine regime, and as a secondary supporting science. One veterinarian said:

"This law that should accommodate our concerns is dominated by the power of husbandry scientists who are notably businessmen. A husbandry student has only learned about management, food, genetics, and nutrition. Yet they want to rule the veterinarians. They are content that this law should bear on breeders. But when it comes down to veterinarians having the power to refuse certificates needed to assure that animal imports do not threaten the country, they say: do not give power to the veterinarian."[55]

During the process of debating and drafting the Bill, the veterinarians therefore sought a provision that acknowledged their expertise and authority. Article 68 on the Veterinary Authority duly came into being, but the veterinarians claim that this was, and remains, flawed, with authority ultimately vested in the government, not them. One academic study prepared for the Bill pronounces that the "The Veterinary Authority is a government authority making the technical highest decisions on veterinary affairs by involving veterinarian professionalism, as well as by generating all aspects of professional competence ranging from deciding a policy, coordinating its implementation, up to controlling its technical operation on the ground."[56] This is one of the articles that provoked long debate.

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[55] Interview, 12 January 2010.

[56] Academic paper, private document of Dr. Agus Lelana.

Here, and elsewhere in the process, the veterinarians did not help their case by failing to present a unified position. Among them collectively, there was – and is still – not one single clear voice proposing what the form of any veterinary authority should be. In 2005 and 2006, PDHI published two treatises on its proposals for alternative forms: *Principles of Thought on the Making of a Veterinary Authority Agency* [Badan Otoritas Veteriner] *in Indonesia* (2005)[57], and the *Academic Study of the Veterinary Directorate General within the Ministry of Agriculture* (2006). In the former, PDHI proposes an independent agency that would be directly responsible to the President. This was rejected by the Minister of Agriculture who then facilitated the later study. The 2006 study thus proposed the creation of a Veterinary Directorate General within the Ministry of Agriculture. This new organisation would be formed through the merger of two existing directorates – the Directorate of Animal Health and the Directorate of Public Veterinary Health – and would have professional veterinarians in charge as the nation's veterinary authority.

The new director in charge of Animal Health at the Ministry of Agriculture declared:

> *"We have asked OIE to evaluate our vet services. They have a tool. And the evaluation is very bad. The first finding is that animal health is not managed at the proper level. It should be a DG who is in charge of the animal husbandry and animal health. Currently, animal health issues are only taken care of by the Director who is echelon 2. The DG needs to be a vet. There needs to be a CVO [Chief Veterinary Officer]. This office [Animal Health] is currently echelon 2. It is not high enough."*

After lobbying and several meetings with the Minister, efforts to have this first echelon organisation headed by a veterinarian almost succeeded. They were, however, thwarted by a demonstration of students from the IPB Faculty of Veterinarian Medicine outside the ministry offices. A veterinarian said: "The Minister accused us of mobilising the demonstration while we felt that we had nothing to do with it".[58] Some suggest that the Minister was finally declaring his position regarding the establishment of the new Directorate General.

For decades, the contestation between the veterinarians and husbandry scientists had played out in the competition for the leadership of the first echelon organisation, which is now known as the Directorate General of Livestock Services. Positions for top officials within this directorate had previously been interchangeably filled by veterinarians and husbandry

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[57] Principles of Thought on the Making of Veterinary Authority Agency [Badan Otoritas Veteriner] in Indonesia (2005), Academic Study of Veterinary Directorate General within the Ministry of Agriculture (2006).

[58] Interview, 12 January 2010.

scholars. But since the change in nomenclature and structure, from the Directorate General of Animal Affairs and the Directorate General of Husbandry and Animal Health to the Directorate General of Husbandry Production (in 2001) and of Husbandry (in 2002), the domination of husbandry scholars had become evident, with the Director General, a first echelon position, consistently being husbandry graduates. This has had consequences for the AI response beyond the gates of the Ministry. In an interview for this study, the former Minister of Health declared that she had been offended by the fact that she had been put on an equal level with a second echelon official when involved in cooperation between her Ministry and the Ministry of Agriculture.[59]

Following a further presidential election in 2009, won by the incumbent, and the imminent announcement of the formation of a new Cabinet in October that year, rumours emerged that the President would appoint a Deputy Minister for each Ministry. The veterinarians responded by proposing that any Deputy Minister of Agriculture should be a veterinarian, and take the highest command of the Veterinary Authority. This proposal was put forward by the faculty of veterinary medicine association, PDHI, and the Veterinarian Education Council on October 30, very shortly after the new Cabinet was sworn in.[60] The proposal, however, was not accepted, and the President appointed an agricultural scholar, Bayu Krisnamurthi, to the Deputy Minister position. Given past history, this apparent snub and the persistent lack of clarity as to the form of the Veterinary Authority, the veterinarians have focused on Paragraph 4 of article 68 of Law 18/2009 which states: "In order to participate in and achieve global animal health through *Siskeswanas* (national animal health system) as referred to in paragraph (2), the Minister can delegate authority to the Veterinary Authorities."

The veterinarians are much exercised by the term "can" within this article. For them, the use of the word "can" affirms that the veterinary authority basically resides with the Minister, not with them, and that delegation of veterinary authority therefore depends on the Minister's goodwill. Instead, they insist that the authority belongs to them as professionals and PDHI, along with other associations, has proposed a judicial review before the Constitutional Court (ongoing at the time of writing in February 2010) demanding the removal or clarification of this paragraph. A senior veterinarian who was a witness before the court compared veterinarians to court judges:

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[59] Interview, 29 January 2010.

[60] "*Wakil Menteri Pertanian Mestinya Dokter Hewan: Minimnya perhatian terhadap hewan membuat virus mutasi dari hewan merajalela"*, www.vivanews.com, 30 October 2009.

"Judges … have authority to declare a verdict in a court as part of the institution of their legal authority. Verdicts shall not be declared by a minister of law. The same is the case in making decisions about diseases suffered by patients, or whether a state is infected by zoonosis, or even whether a zone should be considered the site of a contagious animal disease. [These decisions] should be made by a veterinary medical authority, not a Minister of Agriculture."[61]

Some other very practical factors are also relevant to these contestations. Veterinarians are very much outnumbered by husbandry graduates, and the veterinary profession is not particularly popular or respected in society or among young people. The faculty consequently attracts less interest from potential students. This contrasts with the faculty of husbandry. As Suharto's "New Order" livestock intensification policy developed, so did the animal husbandry faculties. In 2006, there were around 70 husbandry faculties in universities across the country, compared with just five veterinary medicine faculties. The latter number is currently being expanded to eight, largely as a result of the recognition of the seriousness of the position regarding zoonotic diseases, but this discrepancy has a significant impact on the number of potential – and actual – graduates and civil servant recruitment in local government agencies is rarely directed at veterinarians.

A number of veterinarians report regretting their original historical initiative to set up faculties of husbandry in the universities, which are now evolving and threatening their authority. According to a veterinarian:

"The faculties of husbandry were initially founded by veterinarians. We saw that as an agrarian country, the existence of husbandry graduates was badly needed. But, as time goes by, they forget their roots. The faculties of husbandry expand and its graduates dominate state bureaucracy. All that we have now is this uneasy situation. [62]

An officer in the Ministry of Agriculture offers another explanation for the "emotional" feelings of the veterinarians:

"Nowadays, husbandry graduates become the Ministers of Agriculture. It is never a veterinarian. This is what makes the veterinarians upset. The fact is clear that the faculty

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[61] "*Mangku Sitepoe, "Tanggapan saksi ahli penyakit zoonosis atas perkara* No. 137/PUU-VII/2009", delivered before the Constitutional Court session, 26 January 2010, unpublished.

[62] Interview, 12 January 2010.

of husbandry grew out of the faculty of veterinary medicine. This is why they frequently say: 'My child becomes minister, why can I not?'"[63]

Apart from the small number of graduate veterinarians available, the post-decentralisation local bureaucratic templates, as defined by the Ministry of Internal Affairs, provide no professional positions for veterinarian civil servants. At the local level, there are two local bureaucratic organisations concerned with agriculture: the agricultural service agency (*Dinas Pertanian*) and the livestock service agency (*Dinas Peternakan*). In the latter, most professional positions are available for husbandry graduates, and the rest are for graduates other than veterinarians. Consequently, very few veterinarians even apply for civil service positions, and animal health responsibilities have largely been taken over by husbandry graduates, law graduates, and even religious graduates. "Should we need to have a veterinarian colleague become a civil servant, we must lobby the regent or the governor", reported one veterinarian.[64] For the veterinarians, such a policy appears not only unfair for them, but also dangerous for animal health protection. Another senior veterinarian declared:

> *"Let us talk about rabies in Bali, which is a big problem. The local livestock service agency there says that dogs are not farm animals, so why should they be responsible for dealing with them…. Just let the health service agency handle it…. Then everyone says: 'No, we won't do it!' So, no one is responsible for collecting data on infected dogs*.[65]

The veterinarians assume that their desired institutional power is part of a natural law. A husbandry graduate interviewee accuses the veterinarians as being entrapped in a corps sentiment and having a narrow perspective. Animal livestock production and animal health, for him, are two sides of the same coin: they cannot be separated from each other. He claims that all the objections the veterinarians have made have been accommodated into the new law and says that "Article 96 allows veterinarians to make their own laws of veterinary medical practice and include other veterinary provisions".[66] The new Deputy Minister of Agriculture, Bayu Krisnamurthi, in his speech before the PDHI's 57th anniversary celebrations on 9 January 2010, offered four institutional alternatives to formalise veterinary authority. First, an autonomous Veterinary Authority Agency under the President; second, a new first echelon

[63] Interview, 27 January 2010.

[64] Interview, 12 January 2010.

[65] Interview, 13 January 2010.

[66] Interview, 11 January 2010.

organisation named the Directorate General of Animal Health, which would be chaired by a veterinarian; third, by transforming the Directorate General of Livestock Production into the Directorate General of Livestock and Animal health, which again would be chaired by a veterinarian; or fourth, by transforming the existing National Commission of Avian Influenza into the National Commission of Zoonosis, which would be chaired by a veterinarian.[67] The long and winding road appears destined to wind on…

Money Talks: the Zoning Issue

The World Organisation for Animal Health's (OIE) Resolution number XI of 1990 declared Indonesia free from foot-and-mouth disease (FMD). This gave cause for celebration among Indonesian animal health professionals and public opinion as the disease had been afflicting the country for over a century. As mentioned above, the infection had first occurred in 1886 in the colonial era. Since then, the productivity of local cattle, mainly cows, sheep, and pigs had been badly affected. In 1972, the last year that Indonesia had exported its well-known Balinese cow, the national livestock merchant fleet ceased operations, and today, domestic beef supplies still depend significantly on imports from Australia and New Zealand. In 2008, Indonesia imported around 650,000 live cows and 70,000 tonnes of meat in order to satisfy an annual demand of around 400,000 tonnes, which is growing at 3-4% annually.[68] OIE classifies FMD as a dangerous List A disease, which is highly contagious and can give rise to important economic losses. From 1963-1983, Indonesia expended around Rp6.75 trillion (about US$750 million) on FMD eradication, and when an outbreak occurred in Java in 1983, economic losses to farmers were estimated to be Rp2.75 trillion (about US$250 million).[69]

Since being declared FMD free, Indonesia has maintained a maximum security policy, prohibiting the import of animals or animal products from infected countries. This is referred to as a "country-based" (CB) system. Law 6/1967, which was valid at the time of FMD infection, did not recognise this system, although the colonial Staatsblad Number 432, Article 3 of 1912, and Law 4/1984 regarding Coping with the Outbreak of Infectious Disease in Humans clearly made use of the term "a country free from infectious disease". In 2006, however, OIE introduced the possibility of importing animal products from infected countries that had "zones" free from disease (Terrestial Animal Health Code 2006, Article 2.2.10.11).

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[67] *"Wakil Mentan: Otoritas Veteriner di Bawah Presiden," Kompas*, 10 January 2010.

[68] "Oz and NZ 'panicky' over RI's food resilience program", Jakarta Post 17 February 2010.

[69] Sofjan Sudardjat, *"Penyakit Mulut dan Kuku Sedang Mengintai"*, delivered before Constitutional Court session, unpublished.

This is referred to as a "zone-based" (ZB) system, and Law 18/2009 adopts this term as article 59 paragraph (2): "Fresh animal products imported into the territory of the Unitary State of the Republic of Indonesia… shall come from an animal production enterprise or zone in a country, which has met requirements and procedures for the import of animal products".

This provision has created controversy among livestock producers and animal health practitioners in Indonesia. The common understanding is that a ZB system means that Indonesia may import animals or meat from infected countries that have some officially defined disease free zones. During the sessions associated with drafting Law 18/2009, and after its promulgation as law, much debate has revolved around this provision, which many suggest has been driven primarily by the Ministry of Agriculture. Since 2004, the Ministry has promoted beef imports from Argentina, Brazil and India, which have not been certified by OIE as FMD free, although some of their zones have been.[70] In the eyes of the Ministry, importing from these countries is the best way to address issues of food security and deal with what is perceived to be speculation and profiteering by Australian exporters.

In 2001, the then newly-appointed Minister of Agriculture, Bungaran Saragih, determinedly revised his predecessor's policy regarding this matter and a circular[71] was issued strictly prohibiting meat imports from non-FMD free countries. However, the Ministry is now clearly in favour of ZB, and relies on the international norm as promulgated by OIE, of which Indonesia has been a member since 1950. For the Minister, a CB system disadvantages Indonesia as a huge, archipelagic country that has many natural barriers which can limit the spread of infectious animal diseases.[72] An official of the Ministry of Agriculture declared:

> *"If there is disease in Aceh [on the northern tip of the country], but not in NTT [in the east], we are not allowed to export... this treatment is unfair.… According to international regulations we might export, but if the new law is revised, according to the national law we might not. It is certainly not fair!"* [73]

A lawyer attached to the Ministry argues that ZB provisions are not new in Indonesia, pointing to Government Regulation number 15/1977 on the resistance, prevention, eradication and medication of animal disease. He declared:

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[70] *"Daging Impor Ilegal Siapa yang Punya"*, Majalah Poultry Indonesia Online, 21 July 2004

[71] Ministerial circular TN.510/94/A/IV/2001, dated 20 April 2001.

[72] This has not stopped the spread of AI.

[73] Interview, 27 January 2010.

"Article 8, paragraph (1) of the regulation puts it like this 'the Minister decides the types of animal diseases and the free zones...'. What is meant there by a 'free zone' is a certain limited region where animal or cattle are under the surveillance of an authoritative agency appointed by the Minister, and within that region and during a certain period, there is no animal disease found there. The provision implicitly admits the presence of a zone-based approach to deciding from where animal products might be exported."[74]

The Ministry of Agriculture firmly insists on this point in public. More discreetly in a reversal of conventional lobbying postures, Ministry officials have been arguing their case with industry representatives. Several poultry industry associations have confirmed that they were approached by Ministry officials. One declared:

> *"Regarding this matter, I have been lobbied by Ministry of Agriculture officials. The issue at that time was related to zoning; whether the basis of animal disease zoning be a country or the zone of a country."*[75]

Poultry associations such as Pinsar, FMPI, GPMT and GPPU[76] say that they were initially in favour of the CB system, but are now in agreement with the Ministry in favouring a ZB system. One association representative declared: "Everything actually depends on how prepared our risk management is". [77] Another professional expert, who followed the progress of Law 18 closely, said that he initially insisted on CB, but eventually came round to understanding the Ministry's position. He said:

> *"If you look at FMD spread, Malaysia and Brunei are in the same archipelago as Indonesia, but have in fact never been infected. Spread is made by humans."* [78]

Not everyone who resists the implementation of a ZB system is criticising the specific OIE norm, but they are often more concerned about the interpretations and the practicalities of the regulation. This is a common perspective among veterinarians. One senior veterinarian suggests that a ZB system is primarily designed to address disease control, not import/export regulations. She said:

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[74] Interview, 4 January 2010.

[75] Interview, 7 January 2010.

[76] See Case Study 3 for an explanation of these acronyms and the roles of the different organisations.

[77] Interview, 6 January 2010.

[78] Interview, 11 January 2010.

"The OIE regulation mentions that zoning is very effective to control disease regionally, but does not affect import allotment. Yet suddenly our law interprets that provision by permitting imports on the basis of zone."[79]

Another veterinarian adds that the OIE regulation on ZB only refers to certain specified diseases. He said:

"OIE defines that a free zone of infectious disease is only valid for a country where infectious animal diseases are still found - specifically, FMD and mad cow disease [CJD].[80] *Indonesia however is free from FMD and no case of mad cow disease has been found. Therefore Indonesia as an FMD-free country should not adopt the ZB system.*"[81]

Other more commercially orientated company-based veterinarians suggest that the distinction between ZB and CB is primarily related to international trade and risk management.[82] This interpretation is largely related to the commercial context. Similarly, it might be suggested that independent veterinarians' objection to the ZB system is more to do with their disgruntlement at what they see as the ministerial high-jacking of veterinary authority, as discussed above. Commenting on the matter of the risk management problem, one company-based veterinarian said:

"It is a problem when the definition of what is safe and not safe that should belong to a medical authority is taken over by a non-medical one. The law permits a non-veterinarian minister to ignore veterinarian prescription."[83]

Many people believe that there are business transactions and inappropriate influence behind the discussions associated with the decision to adopt a CB or a ZB system. No one, however, specifically mentions the actors. One interviewee who followed many of the discussions declared:

"The most transactioned matter has been discussions about zoning. With CB, we can only import from Australia and New Zealand. There must be a deposit ("titipan")[84] *from*

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[79] Interview, 12 January 2010.

[80] Creutzfeldt-Jakob disease (CJD) is a rare and fatal neurodegenerative disease often associated with cattle.

[81] Mangku Sitepoe, *"Tanggapan saksi ahli penyakit zoonosis atas perkara No. 137/PUU-VII/2009"*, delivered before Constitutional Court session, 26 January 2010, unpublished.

[82] Interview, 13 January 2010; interview, 6 January 2010.

[83] Interview, 12 January 2010.

[84] Etymologically, "titipan" means entrusted goods or deposit. Terminologically however, it is a euphemism for "sogokan" (bribery). In the case of "titipan" money does necessarily change hands, but some transaction is made to reach the objective.

Australian cow exporters and importers, while the zone-based involves entrusted goods from those who have interests with export and import from other countries such as India."[85]

Australia's historical contribution to Indonesia's struggle against FMD is much valued in many quarters. A former general director in the Ministry of Agriculture made a point of stressing this, pointing specifically to Australia's grant of 400 cars and 12,000 motorcycles for civil servants all over the country as part of the eradication efforts following the 1983 outbreak.

On both sides, there are many interests which will – or will not – benefit or suffer from the validation of a ZB system. Before Law 18/2009 was enacted by the President on 4 June 2009, the Ministry of Agriculture issued a ministerial decree in August 2008, which was then revised by decree number 3026/kpts/PD 620/8/2009, allowing the import of de-boned meat from Brazil. At the time, many people were surprised by the government's enthusiasm to import from Brazil, an FMD-infected country. Brazilian efforts to export beef to Indonesia have been persistent, and have been persistently rejected. Five ships containing meat from Brazil and Argentina were rejected in 2004.[86] Although having FMD-free zones, the reputation of sanitary standards in Brazil's meat industry is often questioned. A report of the Europe Union Food and Veterinary Office for example, notes that there are some "systemic failures" within the Brazilian meat industry. They include animal registration, animal identification and animal movement controls. Some commentators consequently suggest that there is no assurance that exported animals, or meat, will be free from FMD.[87]

Indonesian small-scale farmers are also against a ZB system. For them, further import licensing is part of a neo-liberal agenda that will be detrimental to their activities and their livelihoods. A senior representative of one farmer's association declared:

> *"The government suggests that the meat import policy needs to be loosened to maintain price stability and develop national food security. Nevertheless, the government forgets that most small farmers – beef and milk producers and poultry breeders – are small*

[85] Interview, 13 January 2010.

[86] Mangku Sitepoe, *"Tanggapan saksi ahli penyakit zoonosis atas perkara No. 137/PUU-VII/2009"*, delivered before Constitutional Court session, 26 January 2010, unpublished.

[87] Steve Dube, Western Mail, 22 April 2008.

enterprises living in villages and are not prepared to meet free competition against foreign big capital and imported goods which are much cheaper."[88]

Another association leader suggests that a free-market neo-liberalist agenda is dominant because no arguments that his organisation put forward to the parliamentary sessions that accompanied Law 18 were accommodated in the new law. He delivered the point vocally to Parliament:

"The food rights are the citizens' rights to eat and develop their own food security. This provision will imply a regulation arranging that in every district region there should be a breeding farm facilitated by the state. Government has an obligation to facilitate the establishment of breeding farms for the people… The provision will also prevent meat importing. If we are still importing, it means that the state fails to perform its obligation, for it is the foreigners who feeds its people."[89]

Other voices are speaking out against those who are opposed to a ZB system. Some Ministry of Agriculture representatives suggest that Australia is the most potent force opposing the adoption of ZB. According to one interviewee:

"*Australia always claims to be the country with the cleanest cows and no diseases. Yet, is it a right that only Australia has clean cows? I do not think so. When meat imports from Brazil were permitted, Australia responded by accusing Brazil of being infected with mad cow disease and FMD. It is all about business competition.*"[90]

On Sanctions and Compensation: Big Winners, Small Losers?

In addition to the provisions of the new Law relating to veterinary authority and zoning, the third main point of contestation relates to sanctions and compensation.

Two major features distinguish the context of the creation of Law 6/1967 and its replacement, Law 18/2009. First, Law 6/1967 was made in a period when the development of agribusiness was a priority in Indonesia, particularly livestock intensification. In comparison, Law 18/2009 was made in a period when zoonotic diseases were increasingly being recognised as a major global danger, with Indonesia at the epicentre of one of the greatest perceived threats, H5N1

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[88] Henry Saragih, *"Gugatan atas UU No. 18 Tahun 2009 tentang peternakan dan kesehatan hewan: pandangan sikap Serikat Petani Indonesia"*, rilis 12 November 2009, www.spi.or.id.

[89] Interview, 7 January 2010.

[90] Interview, 4 January 2010.

avian influenza. Secondly, Law 6/1967 was made in a period when Indonesia was shifting from one period of dictatorship (Soekarno's) to another (Suharto's) with a consequent centralisation of power in Jakarta and an absence of public participation. In comparison, Law 18/2009 was made in a period when Indonesia was experiencing tumultuous democratisation and decentralisation, with a consequent reduction of the central government role, an increase in local government authority, and increased public participation.

Regarding the first context, Law 6/1967 concerns animal husbandry, mainly with the objectives of developing production, improving smallholder livelihoods and meeting the animal-based protein needs of a rapidly increasing population. Provisions on animal health therefore only make up five of 27 articles. Law 18/2009, however, contains 36 articles on animal health (Chapter iv) and 25 articles on husbandry (Chapters v, vi, vii). In general, the new law also attempts to integrate the closely linked, but contested, matters of livestock production and animal health. Closely related to the global threat of zoonoses, Law 18/2009 contains detailed procedures for disease prevention and extermination, underpinned by the provision of criminal and administrative sanctions, which Law 6/1967 did not include.

The second context concerning the political character of the regimes that created the laws is relevant here. Law 6/1967 arguably creates an authoritarian regime as many important rules are delegated to government regulations, including the provisions for sanctions. The new Law however presents an interesting paradox, which has provoked broad debate related to the public participation required by a democratically made law. Article 45 paragraph (1) of Law 18/2009 highlights one vital animal disease prevention procedure whereby people who know of an animal disease event shall report it to the authorities. The precise words of the paragraph (in translation) are: "Any person, including farmers, animal owners and livestock companies managing livestock, who know of the occurrence of contagious animal disease, shall report the event to the Government, Local Government and/or the relevant local veterinarian." In the initial draft, this article contained a provision of *criminal* sanction for those who did not report. Yet, the *criminal* sanction provisions were omitted from the Law – and only lighter *administrative* ones remained. A businessman and the head of an agricultural association testified:

> *"There will be administrative sanctions for the one who does not report. We objected because the sentence was very flexible. For instance, when I work in a place and there is a disease, am I considered to know or not? What about the stable boys?"* [91]

[91] Interview, 26 January 2010.

In the English translation (given above), the word "shall" is a translation of the word *"wajib"* in the official Indonesian version. Arguably, it should have translated into "obliged". In Indonesian legal terminology, the two words *"wajib"* and *"harus"* have different implications. The word *"wajib"* (have the duty of) applies to a person charged by law to perform a command, the violation of which will result in sanctions. The word *"harus"* (must), however, applies to a person charged by law to perform a command, the violation of which will not result in sanctions. The provision of public reporting is considered an important element of the international conception of biosecurity procedures, and veterinarians lament the lack of appropriate criminal sanctions in Law 18/2009. In the ratified version of the Law, chapter 85 explains that the violation of Article 45 (1) will only result in the imposition of administrative sanctions, including fines of between Rp5 million and Rp500 million. Small-scale farmers in particular consider that administrative sanctions will disadvantage them. An agricultural association chairman said:

> *"Only big companies can afford expensive lawyers to avoid paying penalties and fines. If small farmers are convicted, how would they find Rp5 million or Rp500 million?"*[92]

In an interview for this study, a veterinarian suggested that the absence of criminal sanctions was the result of a deal between powerful companies and the government. On one side, no financial compensation is granted to large companies for culling infected birds, but on the other, there will be no real sanction – i.e. time in prison – for not reporting infections. He said:

> *"It's good that there is a provision... but, if there is no sanction, it changes nothing. Administrative sanctions are not helpful. The lobbies of big companies are very strong relating to sanctions because they know there is no compensation. Previously we only compensated for the small farmer. Then what about the big? Abroad, all are compensated*."[93]

Article 44 paragraphs (3) and (4) of Law 18/2009 state that compensation shall be awarded only for acts of depopulation of healthy animals and not for sick ones. This is significantly different from the EU and Australian approaches, as described by the veterinarian above, but the large companies, the associations associated with them and husbandry scientists agree precisely with the Indonesian approach. Inevitably, the response is:

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[92] Interview, 7 January 2010.

[93] Interview, 13 January 2010. "*Ketentuan kompensasi ini berdasarkan Pedoman Pencegahan Flu Burung yang dikeluarkan oleh Kementerian Pertanian pada tahun 2004, saat itu informan menjadi salah satu pejabat penting di kantor tersebut. Setelah keluarnya UU 18/2009 ini ketentuan tersebut telah dicabut dan disesuaikan dengan amanat undang-undang*".

"If the sick chicken are compensated as well as the healthy ones culled, then everyone will make their chickens sick in order to get compensation."[94]

Together with the veterinarians, farmers' organisations such as the Indonesian Association of Milk Cooperation (GKSI), the Indonesian Forum of Farmer and Fisherman Communities (WAMTI), and the Indonesian Farmers' Union (SPI) have filed a lawsuit in the Constitutional Court related to the cancellation of article 44 paragraph (3). Their petition document states that they have filed the appeal because the proposed law ignores the rights of farmers over compensation in the case of depopulation (culling) measures. They also accuse the government of not accepting financial responsibility for the damage caused by its inability to control the spread of dangerous animal diseases.[95] In a press release, the chairman of SPI states:

*"The existence of this article clearly has the potential to increase the losses to be borne by the farmers. Such a policy would obviously kill the breeding [*i.e. *farming] efforts. This is a form of disincentive to domestic poultry farms, especially [smallholder] farms. The state does not have appropriate guidelines for managing the affairs of people's welfare… the wrong policy can lead towards catastrophic implications for the poverty of rural farmers."*[96]

International rules as published in OIE regulations specify that sanction and compensation policies should be balanced. As stated by a veterinarian who worked as an OIE official, the countries of the European Union have implemented an agreement to provide joint funding to be provided for those member states affected by an epidemic. A similar system is understood to operate in Australia where large companies have a cost-sharing agreement, with money collected from items such as small processing fees disbursed as a depopulation compensation fund when outbreaks occur.

An association leader, who is also an executive of a large poultry company, explains some of the complexities:

"Every day there are dead chickens actually. But we never know whether it is AI or not because our procedures are that when there are dead chickens that are estimated to bring

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[94] Interview, 11 January 2010; interview, 6 January 2010; interview, 26 January 2010.

[95] *"Peternak, Nelayan, Petani, dan Konsumen Ujikan UU Peternakan dan Kesehatan Hewan"*, in www.mahkamahkonstitusi.go.id, 29 October 2009.

[96] Henry Saragih, *"Gugatan atas UU No. 18 Tahun 2009 tentang peternakan dan kesehatan hewan: pandangan sikap Serikat Petani Indonesia,"* rilis 12 November 2009, www.spi.or.id.

systemic impact, all chickens in the same house will be culled. So we are very strict. Even before AI all the chickens in the same stable had to be culled to prevent the disease spreading. Perhaps many cases of AI happen in Sectors 3 and 4 [smaller, less biosecure farms – see Case Study 3 for details of this classification] because they do not apply good biosecurity procedures because it costs money. When they find a dead chicken, they will think twice or three times before destroying the cage, and then all the chickens are dead."[97]

A veterinarian who became expert witness before the Constitutional Court gave a defence for the farmers. He stated that the new Law is no more advanced than colonial rule. Quoting Gazette 1912 no. 432, which is becoming a sacred book of sorts for Indonesian veterinarians, he stated:

"*In accordance with Article 23, paragraph (1) point (d), in tackling infectious animal diseases, depopulating sick animals and animals suffering from high-risk disease, those destroyed should be compensated in accordance with market prices. Therefore Article 44 paragraph (3) of Act 18/2009 is against the 1912 Gazette No. 432*." [98]

Budgets and budget management are always cited as the constraints to compensation in Indonesia. Decision-makers are reported not to be familiar with the emergency budgetary system for handling outbreaks, and the current compensation system is now only synchronised with the six-monthly state budget mechanism. However, if reporting is to be encouraged, compensation, especially for healthy animals, cannot be postponed for six months or more. Compensation will doubtlessly stimulate farmers to report if animals are sick. Conversely, without compensation, farmers will have no incentive to report, but will probably, and counterproductively from the point of view of disease control, move the sick animals as quickly as possible to market, or dispose of the carcasses quietly. Veterinarians reporting will also find themselves in an invidious position with no effective compensation mechanism.[99] Until the thorn of compensation is grasped, attempts to control zoonotic and other infectious animal diseases in Indonesia will find little traction.

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[97] Interview, 26 January 2010.

[98] Mangku Sitepoe, *"Tanggapan saksi ahli penyakit zoonosis atas perkara No. 137/PUU-VII/2009"*, delivered before Constitutional Court session, 26 January 2010, unpublished.

[99] Interview, 13 January 2010.

Conclusion

Law 18/2009 was expected to strengthen Indonesia's ability to face animal health crisis and thus its contribution to global health security. Yet, it was shaped along completely different lines, by competing agendas among which food security, business interests related to the ability to export and import, and competition between professions – notably veterinarian and husbandry specialists – stand out. An understanding of the winners and losers of this new law may help rethink international cooperation schemes in view of making them more relevant to addressing local dynamics that hinder the strengthening of Indonesia's legal framework.

Among the absolute or relative losers, we may highlight the veterinarians, who have not secured the authority they were seeking. No precise procedure ensures that they have a critical say in the management of animal health crises. This authority is still in the hands of the Minister of Agriculture. However, looking at the glass as half full rather than half empty, the new law does give slightly more status to veterinarians. Among relative losers, we may also mention the Australian importers, who are directly challenged by the "zone based" system, as under the "country based" system only Australia and New Zealand provide imports. The small-scale farmers, producing cows or poultry, also see themselves as losers, since the principle of administrative sanction has been established for not reporting outbreaks, while no compensation has been granted for culling infected poultry. This provides limited incentives for sharing information. Beyond this, the consumers are also left out of the picture, as the law is not designed to address their concerns or needs. This is an area where the international community may want to consider increased action, in terms of stimulating consumer organisations, encouraging the involvement of civil society in requesting enhanced transparency on animal health issues, and providing support for legal drafting.

Relative winners arguably include the following. First, the husbandry graduates and the scientists who graduated from husbandry faculties: they keep their status and stance within the state, since the veterinarians have not managed to challenge their pre-eminence. We may note here that this group apparently has no driving agenda or ideology, although they may be more concerned about economic growth than animal health *per se*. It is the veterinarians who define their existence as a group; in fact, husbandry graduates are so numerous that they do not need strong organisations,[100] like the veterinarians, to organise themselves and push to enhance or protect their status. Second, the Ministry of Agriculture is arguably another winner: it has managed to keep control over the legislative process and drive the drafting of

[100] There is an "Association of Husbandry Alumni", but it is not as active as the organisation of veterinarians.

the Bill through a team largely made up of husbandry graduates, including the Minister himself. Finally, large businesses are arguably beneficiaries of the new law, as it does not challenge any of their practices. For sure, businesses are not happy about the chapter on administrative penalties and fines – but they have managed to avoid the threat of "criminal" penalties. Although the amount of potential fines is considered important, the conglomerate companies' close relations to public authorities and their possible recourse to efficient lawyers are likely to minimise the impact – unlike the effect it may have on an individual small farmer. Beyond this, no provision of the new law makes large business unhappy.

Finally, regarding the decentralisation/recentralisation issue, little has been achieved through this new law. The key Ministry of Agriculture official in charge of animal health recognised this situation and complained once again that:

"*Most important is that in Indonesia we have the autonomy regulations. There is no one line between the central and the regional…. The Ministry of Interior Affairs is helping. They will revise the regulations on autonomy - so that the law can have national effect. They have asked for an academic paper on this.*"

One must hope that this academic paper is convincing, and not a path into even longer grass.

From a global governance perspective, the relatively low political and administrative stance of the veterinarian profession in Indonesia has continuous global negative impacts on international health. The new animal law is still far from recommended OIE procedures and, according to one interviewee, effectively has "nothing to do with them". Illustratively, Indonesia still has no chief veterinarian representing the country at OIE. Animal health messages trickle up and down poorly, partly because of the low numbers and poor standing of the veterinarian profession. The international community should think about how it rethink its modes of intervention in a way that would help tilt some key local power relations towards better outcomes for the world at large.

4. MANAGING THE CRISIS: GENEALOGY AND BIASES OF THE INTERNATIONAL RESPONSE

Since 2005, Indonesia has received over US$138 million from the international community to fight the HPAI epidemic, out of a total commitment of US$175 million.[101] This financial support, the largest provided to date to any country in the world for this purpose, has largely been disbursed through United Nations organisations working with the Government of Indonesia (GoI).

The UN Food and Agriculture Organisation (FAO) (funded by USAID, AusAID, and the governments of Japan and the Netherlands), working with the Ministry of Agriculture (MoA), has been in the front line in terms of designing and implementing programmes relating to disease surveillance, movement controls, vaccination, socio-economic studies and public information and communications, in particular. The World Health Organisation (WHO) (funded by USAID, AusAID and the government of Japan) has supported the Ministry of Health (MoH) in strengthening the health system (44 hospitals nationwide have been developed as specialist H5N1 referral centres, for example), providing antiviral stockpiles, training health care and surveillance workers, building laboratory capacity (originally there were just two BSL-3 capacity laboratories in the country), developing information systems, and running research and public communications programmes. Simultaneously the United Nations Children's Fund (UNICEF) (funded by the governments of Japan and Canada), working with KOMNAS FBPI,[102] and DAI's Community-Based Avian Influenza Control Project (CBAIC) project (funded by USAID), have developed and delivered a wide range of communications initiatives designed to take the perceived dangers of the disease to the masses and change behaviour. Other active agencies have included the International Livestock Research Institute (ILRI) (funded by USAID and the World Bank), the Australian Centre for International Agricultural Research (ACIAR) (funded by the Government of

[101] International Ministerial Conference on Animal and Pandemic Influenza 20-21 April 2010 Hanoi, Vietnam. Report "Animal and Pandemic Influenza: A Framework for Sustaining Momentum" available at: http://un-influenza.org/files/Animal_and_Pandemic_Influenza-AFrameworkforSustainingMomentum.pdf.

[102] KOMNAS FBPI, the Indonesian National Committee for Avian and Pandemic Influenza, was established on 7 March 2006. It is located within the Coordinating Ministry for Economic Affairs and is tasked with coordinating both avian influenza control and pandemic influenza preparedness. In March 2010, it is scheduled to be rearranged into a body specifically focused on zoonotic diseases, with pandemic preparedness being covered by the National Agency for Disaster Management (BNPB).

Australia), the United States Department of Agriculture (USDA), and the Indonesian-Dutch Partnership (funded by the government of the Netherlands).

Despite these determined and technically well-justified efforts, the response in Indonesia cannot yet be characterised as a success. HPAI has become endemic in Java, Sumatra, Bali and South Sulawesi, and sporadic outbreaks continue to be reported in other areas. FAO has been the most active agency. It is self-evident that HPAI is primarily a disease of animals, and there is a well-founded appreciation that the H5N1 virus is best dealt with in animals before it infects humans.

Since early 2006, FAO's core activity has been the Participatory Disease Surveillance (PDS) project, which in 2007-2008 added a response component to become the Participatory Disease Surveillance and Response (PDSR) project, a collaboration between the MoA, local government livestock services and FAO. The project is based on a qualitative approach to epidemiology known as participatory epidemiology, which has the objective of developing and supporting a community-based response to detecting and preventing the disease by using local knowledge of where and when outbreaks are occurring, and enlisting the local population in control efforts. It has much in common with established techniques of participatory rural appraisal (PRA) and has involved 2,200 community agents and 350 veterinarians operating in 27 provinces through 31 local disease control centres, as well as the development and maintenance of a large database. Similarly, since 2006, UNICEF, working closely with KOMNAS FBPI, has focused on community activities, launching a national awareness campaign called "*Tanggap Flu Burung*" ("Take Action on Bird Flu"), which introduced four key messages: don't touch sick or dying birds; wash your hands before eating and cook poultry well; separate new birds from the flock for two weeks; and report flu-like symptoms and seek medical attention, especially after contact with birds. The campaign included radio and television announcements, public concerts, posters and billboards, and the production and distribution of leaflets and other materials. Also launched in 2006, the CBAIC project has supported KOMNAS FBPI, managed and coordinated community mobilisation and training in collaboration with local organisations such as Muhammadiyah, one of Indonesia's biggest Muslim groups, and the Indonesian Red Cross, and developed and implemented a range of behaviour change communication programmes primarily aimed at those who live or work with poultry.

Here we examine why the response of the international community has focused so much on community level "backyard farming", which almost immediately came to be designated as the main source of the continuing HPAI problem, while it is now argued in many quarters that

this sector was – and is - more of a victim. As one respondent summarised: “We can now see that the problem was and is with the big companies, but the politicians do not like this”. Nor do the international organisations concerned with the response like it much: few, if any, see dealing with multi-national corporations as part of their remit.

Piloting Participation: the “Backyard Narrative”

Given the then limited knowledge of the extent of HPAI in poultry, the pilot phase of the PDS(R) project focused on detection and control in so-called “backyard” (household) settings in 12 districts on Java. It immediately had results: the first quarter of 2006 saw 54 positive cases. This led USAID to extend its support with an additional US$4 million up to May 2007, with AusAID and the Japan Trust Fund also contributing. The objective was to train and provide operational support to government veterinarians and other animal health officers in detecting, reporting and responding to HPAI. In September 2007 the project was extended until May 2008 with US$11 million of support (from June 2007), and at this stage the justification was presented for combining surveillance and response roles. In October 2008, the project was extended further to May 2009 with an additional US$7.5 million of support. In this period, a new IT system was introduced and, for the first time, from December 2008, USAID-supported activities were extended into the commercial sector with biosecurity training.

From January 2006 to September 2008, PDSR teams, comprising over 2,000 trained veterinarians and para-veterinarians, reportedly conducted over 177,300 surveillance visits, detected 6,011 outbreaks of avian influenza in 324 districts, and met with over two million poultry farmers and community members (USAID, 2008) The size of the programme is also reflected in the number of central staff positions involved. In May 2009, there were 15 international and 60 national staff/consultants employed by FAO, with a majority of them supporting the PDSR programme.

At many levels, the PDSR project is a success. Non-veterinarians associated with the broader response comment admiringly on the scale of the operation, its organisation and sense of purpose. The locally orientated, boots-on-the ground approach represents a significant attempt to meet the requirements of Indonesia’s diverse complexity on its own terms, and the human faces it puts on a necessarily massive endeavour is valuable. Through the programme, a cadre of animal health teams has been built up and trained in surveillance, containment and prevention. The programme has provided teams with the resources to conduct field activities and report findings into the national and local livestock service systems, and a broad village-

level approach now encompasses all poultry farmers, traders and community leaders; stress is put on empowering communities to understand the origin, prevention and control of all poultry diseases; and links have been developed with veterinary services where capacity is being developed.

FAO Field delivery in Indonesia from 2005 to May 2009 has totalled over US$31 million, of which about US$23 million (74%) has been spent on the PDSR programme (FAO, 2009, p.23, tables 3, 4 and 5).

Two major questions hang over the project, and indeed so many of UNICEF's, CBAIC's and other agencies' activities: why was the 'backyard' identified so early on as such a critical a sector for intervention, and why did attention remain focused on it for so long, at a such cost, whilst the disease continued to spread? The Independent Evaluation of FAO's Participatory Disease Surveillance and Response Programme in Indonesia (July 2009) highlights this matter repeatedly:

> *"Results emerging from the FAO programme and other sources indicate that sectors other than the backyard poultry sector play critical roles in the dynamics and maintenance of HPAI in Indonesia.* (p.9)
>
> *Based on evidence developed by the FAO programme and other players over the past three years or so, it has become apparent that the focus on the backyard poultry in Sector 4*[103] *may not be relevant to the control of HPAI, even if the measures that PDSR teams are undertaking were made more effective.* (p.44)
>
> *It appears from emerging data that Sector 4 probably represents the sentinel victim of infection, rather than the "engine room" of HPAI dynamics. Infection maintenance appears to reside in the small-scale poultry enterprises of the widely diverse Sector 3, and the marketing channels associated with these, but it is acknowledged that there is*

[103] The FAO/OIE poultry sector classification is discussed in more detail below. The July 2009 evaluation explains it as follows: "Based on the type of business and the level of bio-security, the poultry sector in Indonesia has been divided into 4 categories. Sector 1 is a highly organised industrial poultry system. This sector of the poultry industry group reportedly implements a high level of biosecurity and its products are sold in urban areas and some are exported. Sector 2 comprises poultry business groups that enter the commercial poultry production system and implement mid- to high-levels of biosecurity. Their products are sold in both urban and rural areas. Sector 3 is the group of poultry farm businesses which are very similar to those in sector 2, but have a weaker financial base, and as a consequence a low level of bio-security which is less regularly applied; producers in this sector often have lower and more variable levels of other inputs. Sector 4 is the backyard keeping of poultry, often done as a subsistence or hobby enterprise, with little, if any, in the way of inputs, and no bio-security. This type of poultry keeping is usually found in rural villages and in peri-urban and urban residential areas; it is often a side-business for extra income or for home consumption of poultry." (p.17)

somewhat of a continuum between Sector 3 and certain elements of Sectors 1 and 2.[104] (p.44)

The PDSR does not appear to have had a significant impact on the prevalence of HPAI, and the tools at its disposal are weak. The evaluation team concludes that for effective HPAI control, greater attention must be paid to the commercial poultry sectors, particularly Sector 3, in which participatory disease surveillance tools are likely to play a lesser role than in Sector 4." (p.61)

In particular, the evaluation points to the well documented and dramatic growth of commercial poultry enterprises, particularly in East and Southeast Asia, which is associated with growing economies, increasing affluence, increasing demand for meat, urbanisation and the rise of supermarkets (citing Delgado *et al.*, 1999; Gulati *et al.*, 2005) as being "almost inevitably" involved in HPAI dynamics. Following this global trend, the poultry population in Indonesia grew by between 7% and 15% annually between 2006 and 2008 and industrial production has increased almost tenfold in the last decade.[105] As discussed above, the billion or more chickens produced every year in Indonesia are consumed entirely domestically, giving producers little incentive to adopt international health standards and procedures.

Other factors identified by the evaluation as driving a continued focus on the "backyard" are:

"… the successes the programme was having in detecting disease in that sector [i.e. Sector 4]…

…the conclusion that the commercial sectors of the poultry industry were largely free from HPAI infection, protecting their flocks by a combination of biosecurity and vaccination…

… the enthusiastic support this approach received from the principle donor, USAID…

… a strong working relationship between the USAID office and the FAO technical experts leading the PDSR programme…

… the perceived desirability by many of providing support to the relatively impoverished back yard sector rather than to the commercial poultry sectors…

… [that] the growing industrialised poultry sectors had become quite independent, and penetration by government veterinarians was reportedly difficult…"

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[104] As we saw in our first case study, large industries and big production centres (sector 1 and 2) work in close relation to smaller farms (sector 3) within the so-called "inti-plasma" system.

[105] FAO, 2009, p.18, Table 1: Poultry population.

(FAO, 2009, pp. 26-27)

These factors are expanded, and added to, below.

A Home-grown Plan Superseded by the "Community" Approach

The internationally funded and directed activities were operating under the umbrella of a National Strategic Work Plan (MoA, 2005), which had been drawn up by the government with the assistance of international technical experts and presented at the Inter-Ministerial Meeting on Human and Avian Influenza Pandemic Preparedness in Beijing in January 2006. With an indicative, and ambitious, budget of US$322 million, a politically complicated Steering Committee, (which included the Ministries of Agriculture, Health, Forestry, National Planning, and Industry, and the Coordinating Ministries of Public Welfare and Economics, as well as industry, veterinary association, and international organisation stakeholders), the plan (the NSWP) admitted in an early summary that that "there are still significant gaps in scientific and socio-economic knowledge on HPAI in Indonesia" and called for:

> *"- Control of disease outbreaks based on improved surveillance, early disease detection and rapid response* i.e. *culling infected flocks and vaccinating populations at risk.*
>
> *- Strengthening the current legislative base and the enforcement of HPAI reporting.*
>
> *- Implementing systematic surveillance in poultry sectors defined by FAO as Sector 3*[106] *(commercial flocks with limited/poor biosecurity) and Sector 4 (village/native chickens) - the sectors in which disease outbreaks continue due to inadequate biosecurity and vaccine coverage.*
>
> *- Implementing systematic national vaccine coverage, including reinforced vaccine quality, and the system for delivering it to the farm."* (pp.3-4)

As well as proposing the establishment of a Campaign Management Unit (CMU), embedded within the Animal Health Directorate (AHD) in the Directorate General of Livestock Services (DGLS) of the Ministry of Agriculture in Jakarta, the plan outlined a comprehensive, and technically sound, set of eight elements that were to be addressed: enhancement of HPAI

[106] In the NSWP, the sector classifications, further discussed below, are given as follows: "In the terminology adopted by FAO and OIE, the poultry industry is conceived to comprise: Sector 1: vertically integrated large-scale commercial producers; Sector 2: large, independent broiler and layer producers; Sector 3: small-scale independent operators; Sector 4: producers of free-ranging village poultry. This is a useful working classification, but the distinction between sectors 3 and 4 is not rigid." (Footnote p.6)

control in animals; surveillance and epidemiology; laboratory services; national animal quarantine services; legislation and enforcement; communications; research and development; industry restructuring. The July 2009 evaluation comments:

> *"The NSWP provides a generic blueprint for HPAI control, and is very comprehensive in nature. However, some of the elements are framed around the conventional wisdom on HPAI in Indonesia at that time, which potentially influenced the subsequent direction of the Programme. It states for example that the disease is well controlled in Sectors 1 and 2, and infers that the disease is endemic in sector 4 and only occasional outbreaks occur in sector 3, and it advocates the use of participatory disease surveillance (see for example Annex 3 on surveillance and epidemiology). One of its three campaign components is the implementation of systematic surveillance in Sectors 3 and 4, which almost certainly influenced the initiation of PDS."* (p.21)

An international respondent to this study commented further:

> *"I was not in Indonesia at the time, but the National Strategic Plan called for all these different things to happen at once. This was very much a home-grown plan, a US$300 million wish-list, with eight big and ambitious components. PDS was in fact just one thing in a suite of operations. Addressing the commercial sector was a separate issue. There had to be some priorities and FAO, which was mobilising to deal with an emergency, did not rush to devise a work plan to address the big commercial sector.* [107]

Recognising the scramble of the emergency, and the political pressure to act, it is hard to criticise FAO for prioritising and acting, but the question remains as to why the priority was seen as "backyard" poultry, and why the focus remained there for so long. An Indonesian respondent with long experience of the poultry sector said:

> *"It was an open secret that AI came from the poultry industry and it was being affected badly. We knew it was like that in other countries.*[108] *The focus then was mostly on the disease in layer poultry. There were cases before Pekalongan.*[109] *There were suspicions*

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[107] Interview, 9 February 2010, Jakarta.

[108] In 2003, Korea reported 14 outbreaks of H5N1 in poultry and Vietnam three. Source: http://www.oie.int/eng/info/en_sam.htm. At 28 January 2004, Thailand had seen three laboratory confirmed human cases of H5N1 infection and two deaths, and Vietnam eight cases and six deaths. Source: http://www.who.int/csr/disease/avian_influenza/country/cases_table_2004_01_28/en/index.html

[109] Pekalongan in Central Java was given as the site of the first occurrence of H5N1 in Indonesia (on 29 August 2003) by the then Director General for the Development of Animal Husbandry, Sofjan Sudardjat. "Govt confirms bird flu after long cover-up", The Jakarta Post, 26/01/2004.

that Thai products were coming into Sumatra. Possibly the first case was in Medan, and then it was transported to Java. Smuggling is common. Eggs are smuggled, commercial eggs… It is difficult in Sector 1 and 2… A lot of unofficial information was circulating, and if you talked to the industry players one by one, they admitted they all had a problem. The communities around some major farms – breeding farms – were complaining of the smell of burning. This was the same with some layer farms."

Another Indonesian respondent said:

"We have difficulty coming to this poultry industry. They have the power. KOMNAS has always said that the backyard was the victim of AI, not the cause; that the problem is in the industry not in the backyard farm. In 2003, the first outbreaks were in industry, not in the backyard farms. And then who made the spread? It must have been industry. How do backyard farms spread the disease so quickly all over the country?[110]

The complex power relationships between the government and the private sector are examined in more detail below, along with sections that deal with the biases that shaped the response associated with human health, donor demands, and a pro-poor "lens".

"Humans First": Focusing on Symptoms, rather than Causes

As Scoones and Forster (2008, p.12) point out, within an overarching "outbreak" narrative (see Wald, 2008), the global response to avian influenza has been driven by three main narratives: (1) a narrative linking veterinary concerns with agriculture and livelihood issues: "it is a bird disease and affects people's livelihoods"; (2) a human public health narrative: "human to human spread is the real risk and could be catastrophic" and (3) a narrative focused on pandemic preparedness: "a major economic and humanitarian disaster is around the corner and we must be prepared". The six deaths from 18 human cases from the first H5N1 outbreak in Hong Kong in 1997, and then SARS, had put the disease in the headlines worldwide in a way that mass mortality among chickens would not have done, and following the re-emergence of the disease in 2003-4, the focus in the rich North was on the pandemic threat. In September 2005, the newly appointed United Nations Senior Influenza Coordinator suggested that a contemporary pandemic could kill up to 150 million people globally.[111] A speech by President Bush to the United Nations clearly indicated that the United States was taking this

[110] Interview, 8 February 2010, Jakarta.

[111] This figure was created by multiplying the mortality of the 1918–20 "Spanish" flu event (approximately 50 million) by the three-fold growth in population since then.

threat very seriously.[112] In the post 9/11 world where threats to homeland security could arise from terrorism and infectious disease – and potentially deadly combinations of the two – the spectre of a major pandemic rang alarm bells. The result was that emergency funds, not just development funds, started to flow.

It was, of course, exactly at this time that officials and international experts were sitting down to draw up the National Strategic Work Plan, gathering in Jakarta, in Western Java, where – according to popular lore – "more chickens are grown on less land to feed more people than anywhere on earth", and attention soon focused on the backyard issue. Several respondents suggested that this was because the backyard was where human health seemed most at risk:

> *"The focus was on the backyard. This was because it was there that there were human cases. But in fact, in terms of disease spread, the backyard is a victim, not a source, not a cause."*

Another put it differently:

> *"The backyard was where people were dying and this was where people had contact with poultry*."[113]

Another said:

> *"In Thailand, where there were human cases before Indonesia, there was a fairly clear correlation between village poultry and cock fighting and human cases of AI."*[114]

Yet another declared:

> *"The human cases were generally associated with sick village birds. This was important especially for USAID and WHO. This was very much to do with the image of the backyard. There was no real research."*[115]

Contact with poultry was not immediately apparent for Indonesia's first laboratory-confirmed human case, reported in July 2005: a 38-year old government official with a central Jakarta office who worked internationally.[116] However, by 28 September 2006, there had been 68

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[112] http://www.whitehouse.gov/news/releases/2005/09/20050914.html [accessed 5 February 2010].

[113] Interview, 9 February 2010, Jakarta.

[114] Interview, 8 February 2010, Jakarta.

[115] Interview, 5 February 2010, Jakarta.

[116] http://www.who.int/csr/don/2005_07_21a/en/index.html.

confirmed cases in Indonesia of which 52 had been fatal[117] and the NSWP was (reasonably) clear: "Although studies have not always been definitive, contact with poultry is considered to have been the route of exposure in most cases." (p.6)

This is not to suggest that this early understanding of disease transmission[118] was incompetent, but against the background of the global pandemic threat, and global media concern, it is suggested that this focus on human cases among those working and living with poultry in the Indonesian countryside had two major effects. One respondent said:

> *"People took HIV/AIDS as a model and all the campaigns that have focused on attempts to prevent transmission. The idea was that certain well-defined behaviour needed to be changed and if this can be done, the transmission chain would be broken. That was the mindset and it was this conceptually simple approach that was used for H5N1. It was a bird virus and humans caught it from birds. You had to cut the interface between humans and animals. And where was this interface? Where do people live with birds? The backyard! Hence the perceived need to wash hands, cage birds, stop touching poultry that was so much a focus of the UNICEF campaigns… With hindsight, we might say that this relatively simplistic approach was not the best way to stop the spread of the disease. Since then new evidence has came up. We now know that the disease does not readily transfer to people, even if they are in close contact."*[119]

Another shift in the scientific consensus appeared in May 2007, with an FAO review of PDS and PDSR, which included an external review of the PDSR database. This found a negative correlation between the reported human H5N1 case rate and native chicken density, and was interpreted to mean that there might be a greater risk of human infection associated with

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[117] http://www.who.int/csr/don/2006_09_28/en/index.html.

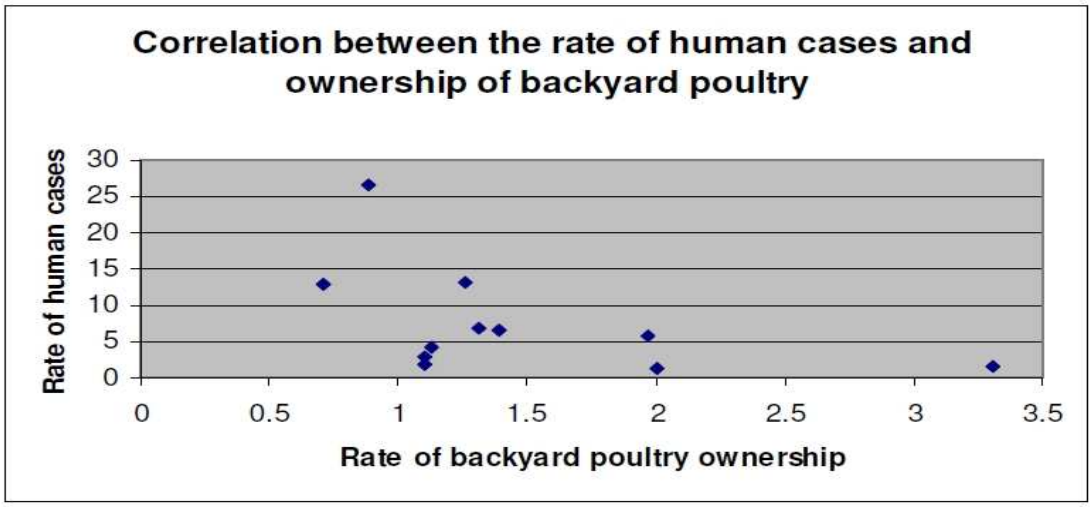
[118] Sedyaningsih *et al*. (2007, p.524) investigated 598 suspected cases in Indonesia between July 2005 and June 2006, of which 54 were confirmed and 41 fatal: a case-fatality proportion of 76%. Confirmed cases ranged in age from 18 months to 45 years, 53% were under 20 and 24% under ten. Forty-one case patients (76%) had had direct or indirect contact with poultry during the preceding two weeks, and six case patients (11%) had poultry-related occupations, including three farm workers, two live market workers and one shuttlecock feather selector. A separate global analysis of 340 cases as of 14 December 2007 found that direct avian-to-human virus transmission is the predominant means of infection, and handling sick or dead poultry is the most commonly recognized risk factor (WHO 2008, p.262). Bird-to-human transmission is believed to occur largely by infected bird secretions being inhaled or transferred with contaminated hands to the mouth, nose or eyes (Vong *et al*. 2008, p.1304) with the virus replicating primarily in the human respiratory tract. Slaughtering, defeathering, or preparing sick poultry for cooking; playing with or handling diseased or dead poultry; handling fighting cocks and ducks that appear to be well; and consuming raw or undercooked poultry or poultry products have all been implicated in transmission. In Indonesia, contact with fertilisers containing poultry excreta is also considered a risk factor (Lye *et al.* 2006, p.472).

[119] Interview, 9 February 2010, Jakarta.

marketing procedures rather than contact with backyard poultry (FAO, 2009, p.27; see also Graph 1). As one respondent put it, in a personal memo (Bell, 2009, p.9):

> *"If we consider the number of family poultry per person in the different provinces in Indonesia, and then the number of human cases of AI per unit of human population, we find that the more family poultry there are per person in a given province, the less human cases there are per unit of population, and* vice versa. *In other words, there is a negative correlation between family poultry ownership and human AI cases. For example, South Sulawesi has high family poultry ownership, but there has been only one human case there, whereas Jakarta has virtually no family poultry per person and yet it has one of the highest rates of human AI cases."*

Graph 1 – Correlation between the rate of human cases and ownership of backyard poultry



Source: Bell (2009).

Another analysis by Otte *et al.* (2007) determined that Thai family poultry is at lower risk from HPAI infection than commercial broilers or layers. A further, more recent, extensive

study (ILRI, 2009) found that the presence of industrial broilers was a risk factor for the occurrence of HPAI in family poultry in Java.

A respondent summarises current thinking:

> *"There is more known now about the peak in cases we see regularly in the rainy season [approximately November to March]. Rain, water and flooding have now been identified as risk factors and significant vectors of H5N1. The fact is that the virus is probably transmitted in water. This is why there are more cases in Jakarta. There is a growing understanding that people were barking up the wrong tree when they were most concerned about poor people living day-to-day with poultry."* [120]

The Construction of Meaning by Donors

In their works of diagnosis and understanding, the technical agencies and donor community have been producing concepts meant to clarify problems, which arguably have blurred or obscured some important ones. Notably, large poultry businesses were initially constructed as "biosafe" conceptually, as reflected in a typology of poultry sectors used by FAO. Even today, the effect of this typology is rarely questioned. It nevertheless represents an important aspect of what power analysts call "structural power" – power embedded in the intrinsic identity of actors.

The origins of the FAO classification of the poultry sector are hard to determine, but appear to have emerged from FAO taxonomies of world livestock systems in the 1970s or 1980s. As mentioned above, there are various minutely varying forms of this, but below is one definition given by FAO:

> *"Sector 1: Industrial integrated system with high level of biosecurity and birds/products marketed commercially (*e.g. *farms that are part of an integrated broiler production enterprise with clearly defined and implemented standard operating procedures for biosecurity).*
>
> *Sector 2: Commercial poultry production system with moderate to high biosecurity and birds/products usually marketed commercially (*e.g. *farms with birds kept indoors continuously; strictly preventing contact with other poultry or wildlife).*
>
> *Sector 3: Commercial poultry production system with low to minimal biosecurity and birds/products entering live bird markets (*e.g. *a caged layer farm with birds in open*

[120] Interview, 9 February 2010, Jakarta.

sheds; a farm with poultry spending time outside the shed; a farm producing chickens and waterfowl).

Sector 4: Village or backyard production with minimal biosecurity and birds/products consumed locally." (FAO, 2006, p.9)

The question here is how could anyone who subscribes to this world-view not see the lower numbered sectors as being more implicated in the generation and spread of a poultry disease?

In Indonesia, this classification has framed the avian influenza response in ways that have not always been helpful. One respondent said:

"There were some early studies done on the backyard sector. One finding was that there was this 'Sector 3.5' – small scale commercial – that merged in tiny steps into backyard activities. The fact that these sectors were separate in Indonesia was a kind of myth."

Presented with this "Sector 3.5" analysis, another respondent replied:

"I would say that it is even more complicated than that. It is really Sector 3.1 to 3.9 and this is not easy. There is a big range of Sector 3. They do not all have the same management systems. They do not all have the same skills. Some might have thousands of birds, or some just a hundred. The same approach may not be suitable. But we have to do something."[121]

Similarly, the classification makes no distinction between layer hens, which can live several years, and broilers, which only have an expected life span of a month or so.

Another instance of structural power is found embedded in the professional cultures of certain experts. International veterinary expertise arrived in Indonesia with an inevitable focus on animals, and an initial neglect of the complex chains involved in farming poultry that run from feed production through transport systems to slaughtering methods and even the drainage systems of public markets. A belief also arrived that technical solutions, tried and tested in other regions, were the most appropriate way to deal with the disease. One respondent said:

"In 2003, there was huge mortality on commercial farms. Then the big companies started vaccinating and appeared to get a grip. Given the huge purchases of vaccines, most international donors thought the big companies could manage the crisis and were indeed managing pretty well. We are now less certain that vaccination is a solution in Indonesia."

[121] Interview, 12 February 2010, Jakarta.

Hindsight is indeed a privilege, and it is unfair to suggest that the doctors, scientists and veterinarians who engaged so energetically in the early days of the avian influenza emergency wasted their time, but one lesson to take away from this experience, particularly for the scientists, may be that scientific knowledge is not fixed. In the search for an "evidence base", practitioners can forget that the boundaries of science change, that place, culture and time all inform it, particularly the interpretation of scientific findings and the uses to which they are put (see Sillitoe, 2007). Post-modern critiques of science insist that science is not an objective and value-free search for "truth", but is culturally relative and subjective (Knorr-Cetina, 1999; Latour and Woolgar 1986; Latour 1987, 1999). The reductionist approach of science can miss the point, especially in dynamic socially driven circumstances. As Fairhead and Leach (2003) point out, if scientific knowledge is created by people and institutions with situated and partial perspectives, it will ask situated and partial questions responding to situated and partial interests. Given that scientists frame policy issues by defining what evidence is significant and available, and policy-makers frame scientific enquiry by defining what is relevant, unhelpful self-sustaining routines of co-production can emerge (see Jasanoff 1990, 2004; Renn, 1992; Jasanoff & Wynne, 1998; Stirling, 1999; Van Zwanenberg & Millstone, 2005).

One respondent's analysis gives us an insider view of what occurred within the donor community. It could have come from a text book:

> *"Once an initial assessment was made, it was not challenged for a long time. This was partly a result of psychology and groupthink dynamics. You see it often in medicine when a presumptive diagnosis is not challenged. The environment, the culture, does not encourage challenge. Now in medicine there are rounds when people talk about what went wrong. We did not have that for the first two years. Now we know that there was much that was not known…*
>
> *In the early days, there were so few individuals involved and there was inevitably a bias towards their expertise. Also, the people planning were also the people carrying the tasks out, implementing. The planners were carrying out strategy. So there was a bias towards reinforcing the original assumptions. The expertise of the staff working on the issue was also focused on small holders. So on the whole, the backyard approach made a lot of sense early on. If we knew then what we know now, the approach would have been different…*
>
> *The initial understanding was based on semi-structured interviews, much like you [the interviewers doing research] are doing now, and was thus dependent on trust and on the assumption that interviewees had the right kind of knowledge, which was not always the*

case. Commercial producers might not know what HPAI looks like and it might have suited them to say 'We do not have a problem'…

There was also a bias from initial success of the work. This led to more funding which reinforced the approach. It was self-perpetuating."[122]

Another respondent pointed to the reality:

"You have to work on hunches sometimes in an emergency."

She Who Pays the Piper… the Compulsory Power of Finance

The analysis above appears to be relevant across a number of intersecting spheres of interest relating to the avian influenza response in Indonesia between 2006 and 2009. One respondent to this study said:

"Never forget that PDSR was largely imposed on Indonesia. It was a donor-led process. There was a lot of donor pressure. There was an atmosphere of emergency."

Another said:

"USAID was one *funder. AusAid was another. They said: 'We want this programme implemented in Indonesia'. The government did not ask them to come. After a year or two, there was no Memorandum of Understanding, so everyone was scrambling to have an agreement signed by the Ministry of Foreign Affairs. It all grew too fast. USAID was pouring money in. FAO had to spend it. FAO had to do what USAID wanted. FAO is tight-lipped about this, but USAID led the whole thing, notably their specialists in the US, who dictate to this day what is put forward for FAO to do in Indonesia. FAO is doing things they do not want to do. PDS was used very successfully in another form in Africa for Rinderpest. But this was a different disease on a different continent. Why did people think it would work in Indonesia? They did not know, but it was a good way to spend money fast."*

USAID in Jakarta did not respond to our requests for an interview, but many of our respondents pointed to the compulsory power associated with their funding, and their dependence on internal experts and tried and tested solutions as being factors in the persistence of the focus on the backyard.

Another respondent, citing a 2006 USAID document that funded the first expansion of PDSR, said:

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[122] Interview, 9 February 2010, Jakarta.

"In the annex the assessment was: Sector 1 & 2 – largely free; Sector 3 – largely free; Sector 4 – HPAI. So the focus went there. That initial assessment was a bit flawed."

The respondent continued:

"Yes, the donor community – USAID – took a strong technical leadership role. They were a bit reluctant to admit the need to deal with the market chain for example… You do not spend so much money with the industry; the money is easier to spend on farmers. There was $190 million in the pot and it needed to be spent immediately."

A solution proposed by one respondent was better collaboration and coordination between the agencies, and between the agencies and the government:

"There is a need for all bodies to work with the government. Now the bilaterals work through contracts, not primarily with the government. One of the germs of participation is that you work on the concerns of your stakeholders. USAID should work with KOMNAS, the MoA, but it is used to telling its contractors what to do. It is trying to effect change without the government being on board. Like after the recent earthquake in Haiti. The US wanted stuff done, so they went freelance, they went with contractors. It needs to be a bigger a partnership. There needs to be trust in the multilateral approach".

Pro-poor Lenses: Blurring the Diagnosis, Shaping the Policy Response

Aside from the imperatives of the emergency, and the hegemony that can be associated with bilateral aid, other respondents offered a more nuanced analysis of the situation. One respondent suggested:

"The international organisations – DFID, USAID, for example – typically have a poverty lens. So they all started with backyard small farmers. PDSR, this started with an image of poor small farmers."

Similarly, FAO – whose motto is "Helping to build a world without hunger" – in its mandate and its culture, leans very much towards supporting the poor and poor farmers. Given instructions and funding to do exactly that in Indonesia, where avian influenza carries significant implications for both food security and human health, why should the organisation have questioned the brief?

This pro-agricultural-poor lens also sat well with the mindset of the Indonesian government, particularly the Ministry of Agriculture. One respondent said:

"The mindset of the government is to empower the community to deal with poverty. The poverty reduction strategy is the umbrella of all governmental policies and poultry is no exception."

In the same vein, another commented:

"From when Indonesia began, the idea was that we needed to support the poorest. The Ministry of Agriculture says: 'adapt to the small producer'. This is their way of thinking. There is a history of this in all agriculture, including the poultry industry. In the 1980s for example, the government began the backyard poultry intensification programme. But helping the poor is not necessarily going to feed the country."

Yet another respondent underlined the political weight of the rural population and the need for the government to emphasise support to the poorer farmers:

"FAO entered the country and started working with the government. They had to. This is their remit, their default position. This led them to focus on the poor and the local vet services. The central government has no real say over the big farmers and is focused on the development of small farmers, ensuring that they have some competitive advantage. Many votes are in rural Java, and with the arrival of democracy, and in an area where so many people's livelihoods were affected, AI was a critical issue. So PDSR was developed only to look for the disease in 'ayam kampung', and they found it. So there was this observation bias – you find what you are looking for, so you think you are looking in the right place. But how did they know the industry had it under control? There was no real good scientific research."

All of this supports the position that the construction of knowledge is not an agenda-free process. Illustratively, an important contestation is reported to have occurred behind closed doors between USAID and USDA. While USAID is the US international development agency, and reports to Congress on the basis of its "poverty" mandate, the USDA representation in Indonesia speaks for the US Ministry of Agriculture and has a far more specific understanding of animal heath issues, notably in the context of big agro-industries. As it turned out, both organisations fought for the definition of the problem and USAID found the higher land – pushing the understanding of the situation towards a poverty related issue. An observer recalled this conflict during an interview:

"As for USDA, it has always worked with commercial people in the US. So it came to this issue with a different mentality. However, it did not prevail… It appears that USAID does not use USDA as a source of expertise. This must have been frustrating and even

discouraging for them. It is said that the USAID health experts based in Washington do not care what USDA thinks. Existing and long-standing consultants are put before the expertise of USDA."

Following a complaint made by USDA in Indonesia to the ambassador (largely over the technical soundness of the PDSR programme), the US government began a review in June 2008. Our observer commented further:

"USAID did review, but there were complaints that they tried to place its own people to review its own work, and I know that USDA categorically opposed at least one of the proposed consultants. The review eventually pointed to the need to work far more with Sector 1-3 [as opposed to Sector 4, the backyard] and gear more towards the commercial sector. During the process, USAID saved face however."

Another powerful dynamic at work in USAID, in the view of several respondents, was the imperative of disbursing funds quickly – an obligation that USAID and other donors arguably passed to the FAO, which was thus put under pressure to get the money moving. According to a respondent:

"This explains why, in Indonesia, the FAO programme was unusually hands on. In other countries, FAO programmes are much less so. Here we went direct to the local stakeholders so as to pour the money out, directly to the field. The PDSR programme paid for instance US$100/month to over 2,000 field workers, which is easy money to disburse. One of the downsides is that this is much less sustainable [a current issue being whether the Indonesian government, or any of the regions, will take over from international funding]."

As another interviewee lamented:

"No one really asked if there were outbreaks in the commercial sector. They just took the word of it. The really sad thing is that millions of dollars were spent with no evidence. No one asked what is driving bird flu and how do we best control it. It is still not really working on an evidence-based model… There was no real evidence."

In the end, the need to get the money on the ground to show "effectiveness", plus the "pro-poor" mandates that inform international organisations such as USAID, FAO, and domestic governments, can prove detrimental when it comes to shaping public health diagnoses and related policies. In the case at hand, the political and organisational cultures combined to produce a biased understanding of the situation.

Silence is Golden…

Although significant progress has been made, the Indonesian national government is, and many regional governments are, challenged at a number of levels. At one level, our analysis of Law 18/2009 above outlined the contestations involved in simply organising legislation and managing the consequences of high levels of decentralisation. At another deeper level, especially on the ground, there may be a sense of shame associated with disease that is not unique to Indonesia. A respondent said:

> *"The Ministry of Agriculture knows where the disease is, but they will not put it into a report. The Local District Livestock Service (DINAS) knows everything but does not disclose it. They do not want to admit they have this disease. The Bupati [local leader] would not like it. They might lose their jobs! In Indonesia it is important to avoid conflict. Bad news is not welcome. The government wants the problem to be in the background. The government does not understand how to control the disease, so they just let it go."*

Another respondent, working in national government, said:

> *"The policy-maker has no power to control industry, especially at the local level. It is like we are in a helicopter. We can look down and see the problem, but we cannot control. We need to revise and strengthen the networks – national government, local government, national business, local business… The policy-makers, especially in the local governments, have no power to control the industry. And even the biggest industries are actually located in local areas…"*

At another fundamental level, trust in government is weak. Nearly every respondent to this study commented on the multifarious forms of "gifting" that go on at all levels of Indonesian society (see Verhezen, 2009) and the related difficulties of applying and enforcing any legislation. Although some commentators claim that post-1998 "*reformsi*" era corruption is actually more damaging because it is fragmented and not under the control of a central force (McLeod & MacIntyre, 2007, p.3), significant efforts[123] are doubtlessly being made to counter the "corruption, cronyism and nepotism" that were so much a feature of Suharto's 1966-1998 "New Order" regime.[124] Other commentators argue that a debilitating degree of continuity

[123] Indonesia was ranked 111 out of 180 countries in Transparency International's Corruption Perceptions Index for 2009, an improvement from 126 in 2008 and 143 in 2007. See: www.transparency.org.

[124] During this period, the Suharto family is estimated to have amassed a fortune of several billion dollars (McLeod & MacIntyre, 2007).

exists between the new democratic politics and those of the authoritarian past (*e.g.* Aspinall, 2005). An international observer commented:

> *"There is a culture of white envelopes. People tell me that if the government proposes new regulations it is only to see more unofficial money going to the government. Both parties think they benefit from the system and they obviously can see an incentive for it to continue. This means that if there is an outbreak, it is not reported, and if government officials arrive to inspect, they do not get access… Bribes exist at all levels. Sometimes what goes on cannot even be called a bribe. It is more about trust between people. For instance, health certificates have to be delivered for animal transport, signed by the local veterinary service. These certificates are sold by the local veterinarian services. It is easier than checking the birds. If they were to report, there would be no longer trust between transport and vets, and they would no longer pay money. They pay money to continue their business."*

Other breakdowns of trust, and competence, relate more to complex matters of influence rather than straightforward corruption. Many respondents pointed to the government's late reporting of HPAI to OIE as a result of "political" influence. One said:

> *"In late 2003, the director of animal health did not want to admit AI. The explanation was virulent Newcastle disease.*[125] *Part of the reluctance came from the need to keep going poultry exports to Japan, in the context of hot competition with Thailand. Eventually the Dean of IPB*[126] *with the two heads of the labs, went to his house and told him the results. But still from October 2003 to January 2004, no action was taken. There was Idul Fitri [the Muslim celebration at the end of Ramadan]. There was Christmas. Then on January 25, 2004, the government finally declared."*

The informant also added that in his view:

> *"The relationship between the government and the large producers may be described as 'mutualism'. This is why they held the announcement back."*[127]

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[125] Newcastle disease is a contagious bird disease affecting many domestic and wild avian species. Its effects are most notable in domestic poultry. It poses no serious hazard to human health.

[126] Institut Pertanian Bogor (or Bogor Agricultural University), a highly regarded Indonesian university located in Bogor.

[127] Indonesia's official report was received by OIE on 2 February 2004. This was preceded by official reports by Lao PDR received on 27 January, Cambodia on 24 January, Thailand on 23 January, Hong Kong on 19 January (in a dead wild bird), Japan on 12 January, Vietnam on 8 January, and the Republic of Korea on 12 December 2003. Source: http://www.oie.int/downld/AVIAN%20INFLUENZA/A2004_AI.php.

By this stage, the government had few other options. It was all over the newspapers,[128] industry was crying out for authorisation to import vaccines[129] and the East Java chapter of the Indonesian Association of Veterinarians (PDHI) was agitating for action regarding the deaths of millions of layer hens in East Java and other areas.

Doubtlessly, the poultry industry does have influence. In Indonesia, the poultry industry contributes some 60% to livestock GDP, and around 1% to national GDP. Among the "big five" integrators, mentioned above, PT. Charoen Pokphand Indonesia is part of the Charoen Pokphand Group, the largest business conglomerate in Thailand. It is involved in agribusiness and telecommunications and is currently one of the largest foreign investors in China: its business registration number there is 0001. CP also operates in Cambodia, China, India, Malaysia, Myanmar, Singapore, Taiwan, Turkey and Vietnam. Its Indonesian operation turned over US$1.32 billion in 2009,[130] and annual profits reached over US$75 million.[131] PT Japfa Comfeed, the second largest integrator, has annual earnings of around US$0.8 billion with a net income of over US$25 million.[132] The third largest integrator, PT Sierad Produce has net annual earnings of approximately US$0.35 billion.[133] Finance on this scale inevitably creates issues of influence. In 1996 in the USA, for example, the Charoen Pokphand Group was charged with making inappropriate donations to the Democratic National Committee in the Clinton era (which were then returned), and in 1994 of "hiring" George Herbert Walker Bush shortly after he ceased to be President to help the conglomerate drum up business in Asia, a charge he denies.[134]

Furthermore, as Table 3 indicates, the poultry industry, in its full extent, is far from being one coherent entity in Indonesia. There are further more obscure organisations such as the Chicken Collection Yard Association, the Chicken Slaughterhouse Association, *etc.* This presents any outsider desiring to get involved with a challenge. As one respondent put it:

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[128] "S'pore, KL freeze poultry plans", The Jakarta Post, 24/01/2004.

[129] "Feathers fly over cover-up, poultry farmers cry foul", The Jakarta Post, 27/01/2004.

[130] Kontan, 16/11/2009, http://www.kontan.co.id/index.php/investasi/news/25123/CPIN-Targetkan-Penjualan-Rp-14-Triliun.

[131] Kontan, 21/10/2009, http://www.kontan.co.id/index.php/investasi/news/23562/CPIN-Untung-dari-Kurs-Kenaikan-Harga-Pakan.

[132] Bisnis Indonesia, 11/11/2009, http://web.bisnis.com/bursa/emiten/1id146258.html.

[133] http://www.kontan.co.id/index.php/investasi/news/27167/Sierad-Sepakat-Turunkan-Nominal-Saham.

[134] See The Washington Post, 27 January 1997, http://www.washingtonpost.com/wp-srv/politics/special/campfin/stories/donors.htm and The Nation, 23 October 2000, http://www.moldea.com/Bush-China-hypocrisy.html.

“There are so many different associations and interests – breeders, feed mills, layer producers, broiler producers, small-scale farmers, mid-scale farmers and so on, and so on – that there is no one group you can work with to say ‘we are working with the commercial industry’. Moreover, Sector 3, which is increasingly recognised to be crucial in HPAI control, does not feel as well represented as it should be.”

Table 3 – The associative structure of the poultry industry in Indonesia

Acronym	Indonesian	English	Function
FMPI	Forum Masyarakat Perunggassan Indonesia	Indonesian Poultry Forum	The largest umbrella organisation with representatives from most other organisations. Meant to promote discussion and understanding.
GAPPI	Gabungan Perusahaan Perunggasan Indonesia	Indonesian Poultry Association	Association representing the 8 large integrated companies.
GPPU	Gabungan Perusahaan Pembibitan Unggas	Poultry Breeding Association	Association with 35 members representing larger breeder companies.
PPUI	Perhimpunan Peternak Unggas Indonesia	Indonesian Association of Poultry Breeders	Association representing small-scale breeders.
GPMT	Gabungan Perusahaan Makanan Ternak	Indonesian Feed mill Association	Association with 48 members representing the feed industry.
GOPAN	Gabungan Organisasi Peternak Ayam Nasional	National Confederation of Broiler Breeders	Confederation of 15 associations (West Java, East Java, *etc.*) with thousands of members (mostly contracted farmers).
PINSAR	Pusat Informasi Pasar	Market Information Centre	Market information association aimed largely at smallholders.

Source: interviews.

A respondent who was present at the time said:

> *"Initially we had two to three times more international personnel – good, experienced people – on non-PDSR team activities than on the PDSR project. But… they could never figure out where to start! Over about one and a half years, they did not even get a concept note together from what I could see – let alone a plan. The donor was not effectively requested to fund commercial or market activities. What happened was one part of the programme – PDSR – moved forward effectively. We used to tell them, just start somewhere…"*

A similar story emerges from attempts to deal with the over 20,000 poultry markets in the country. One respondent said:

"The markets are a particular problem. Like in many countries, they are controlled by an unofficial mafia. Our agents have not had sufficient power to change them. In Hong Kong for example, they have largely solved the problem by cleaning the markets completely every week. But the official market manager does not have the power to do this here, even if you can reach him and influence him. Commercial interests come first in the market."

The bottom line is that the international organisations, which had an obligation and an imperative to act, initially exercised their influence where they could – which was not in the commercial sector, nor in the markets. None of our respondents, which included representatives of some of these large conglomerates, and the industry and farmer organisations, boasted of their political connections or influence, but one high level Indonesian respondent suggested:

"There are many governments here… and business is running the government. You cannot work without the government, but the government is under influence."

Other respondents pointed to some of the harsher realities of the business world. One said:

"The commercial sector was not reporting any disease. But quiet talk said that they did have a problem. There were no incentives for them to report, though. They did not know how to do so without bankrupting themselves. Compensation for culling was then limited to up to 5,000 birds. This caused the disease to be masked to the international and national decision-makers… The bottom line is that the commercial sector does not have confidence in government. They were, and are, running their own research, which they do not share."

Another said:

"All the big companies do as they like, but they avoid confrontation with the government. If they do not like the policy of the MoA, say, there is no open, organised dialogue. The same is true for the vaccine manufacturers, and the same is true for the big poultry farms. The big companies' only interest is short-term profit. They will only invest in controlling disease if it will improve profits."

Yet another respondent said:

"The international community has very little penetration into Sector 3 and no penetration into Sectors 2 and 1 because these are commercial industries which are extremely guarded in any information they provide, in their interactions or engagement with government. There is a very poor engagement from the commercial sector with the government. They do not inform government when they have outbreaks because 1) they

will not be compensated and 2) if they inform, they fear that the government will put restrictions on their enterprises. But they do have problems. We suspect that what happens is that they move the meat onto the market as soon as they can. These are suspicions… FAO knows that outbreaks are currently still happening across all the 4 sectors. The commercial poultry industry worldwide is very much self-regulating. In many countries it is a closed sector. It tends to want to act in a manner separate to governments."

There were other internal challenges to the efficient functioning of government, especially within the Ministry of Agriculture. One respondent said:

"When FAO came, they ran into the problem with the veterinary services – coordinating at national, district, and local levels. PDSR was meant to by-pass that – provide the equipment quickly, the skills, to detect and report. But the director of animal health had no power to help them. In three years, there were four different directors. One director was changed because she said cull, not vaccinate, and the industry did not like that! Imagine, the director was replaced because they pushed for the official, international vet solution. This did not suit the industry or the politicians. They changed the director because she advised culling!"

In all, the range of interviews we conducted provided a widespread feeling that games of influence were at work between the large companies, and central, regional and local authorities. But veterinarians, surely, should not be expected to be politicians, tip-toeing their way through and around complex cultural and governmental matters. It should also not be forgotten how high the stakes were for them, and others, with the situation exacerbated by a nationalistic Minister of Health (now replaced), who refused to share human virus samples or research data with the international community.[135] This Minister publicly accused WHO of colluding with rich world pharmaceutical companies to trick poor nations into giving away virus samples, to be processed into drugs and vaccines which are then denied to countries that cannot afford them. At the time, international veterinarians were extremely concerned that

[135] On 20 December 2006, Indonesia's then Minister of Health, Dr. Siti Fadilah Supari, decided that the country would stop sending human H5N1 virus samples to WHO as long as it followed the "imperialist" GISN (Global Influenza Surveillance Network) mechanism and would only resume if the system were changed to give Indonesia control over where viruses originating from Indonesia went, and a share of profits resulting from research and commercialisation (Supari, 2008). Despite an international diplomatic offensive, in April 2008 she made charges of spying against Jakarta-based US Naval Medical Research Unit Two (NAMRU-2), which had provided confirmation of all human cases of H5N1 in Indonesia from June 2005, and in May 2008, she announced that H5N1 human cases, and deaths, would no longer be reported on a case-by-case basis.

their supply of animal virus samples, which was still leaving the country, might be interrupted.

A Silver Lining

All the challenges and the less than positive power dynamics we have indicated in Indonesian health policy processes should not hide the fact that improvements are underway, as pointed out by several interviewees. The situation is not perhaps as bleak as it first seems. One respondent underlined the greater openness of the government to international advice, which is no longer automatically perceived as unwelcome attention:

> *"From the start until now there has been a major shift. Mainly the government is now open to advice. They are engaged. Before they did not really care. They just wanted people to get off their case, and the international community did not really have any idea of institution building. Their job was managing the unwelcome international attention. It is always complicated when the international community arrives with this good idea. It is a normal development problem."*

Beyond this more mature approach, there seems to be a fair consensus that the people that are now in charge (at the beginning of 2010) are competent and of integrity. As one interviewee declared:

> *"There is hope now for better cooperation between MoA and business. We have a new Minister and a new and highly regarded Deputy."*

Another said:

> *"It is good to see Agus Wiyono in charge of animal health. At last we have a definite, permanent director of animal health. He is a good scientist. He thinks straight. I hope he can help get the government off this poverty kick, and get FAO off this poverty kick. The industry and the government know that something like NPIP [USDA's National Poultry Improvement Plan] can help, and that they need it."*

Most stakeholders we talked to describe this new official as a competent and concerned professional. This contrasts with his predecessor who was convicted of collusion and corruption with respect to payments for sub-standard vaccines bought by the Ministry of Agriculture from Indonesian companies. Many respondents insisted that the appointments of Bayu Krisnamurthi, as Deputy Minister of Agriculture, and Endang Sedyaningsih, as the new Minister of Health, indicate that at the beginning of 2010 there is a professional, positive, wind of change blowing through the ministries.

Conclusions

Until recently, little attention was paid to industrial poultry production by the international organisations coordinating and implementing the response to HPAI. Furthermore, many large companies appear to enjoy political connections, financial power, limited monitoring and regulation, and even the ability to influence strategic decisions within ministries. Meanwhile, the United Nations Food and Agriculture Organization (FAO), the World Health Organization (WHO), bilateral donors and Indonesian ministries alike have long accepted the idea of the inbuilt "biosafety" of industrial production. Consequently, attention has focused on so-called "backyard farming", an outlook that translated into wide-ranging community-based surveillance and response systems, mass communications campaigns, and concerns about the cultural habits of Indonesians with birds. However, it has been increasingly recognised that industrial farming can be a generator for animal diseases such as HPAI, given its high concentration of animals and their poor genetic diversity. It is indeed very likely that industrial poultry production played a key role in propelling H5N1 into and about the country, including through the complex "inti-plasma" structure already analysed.

Ultimately, FAO cannot be criticised for having developed a vast surveillance system that discovered that HPAI had become endemic in Indonesia. When the organisation arrived to confront an emergency situation in Indonesia, there was nothing except rumour and hearsay as to where the virus had come from, where and how it had spread, and what sort of farmers were affected. However, we have argued that a range of factors interfered with the capacity of nearly every organisation involved to make an uninfluenced diagnosis, and to evaluate effectively their ongoing strategy and operations. Notably, the need to disburse international funds, so as to show "effectiveness", did not aid analysis concerning the best strategic angles of action. Moreover, the "pro-poor" mandates that characterise a range of international and bilateral organisations, the political concerns of national and local government, and perceptions of AI as primarily a human health issue, distracted attention from the large industries and objectives related to supporting their key sanitary procedures.

These dynamics and biases largely reflect the organisational culture of international cooperation agencies, as well as the weight of constituted forms of "expertise" and internal planning procedures that were insufficiently challenged for too long. There is a need for the international community to contain such counter-productive phenomena by rethinking the way expertise is mobilised, diagnosis made and strategic options challenged in times of global emergencies.

CONCLUSION: EXPLORING NEW PATHS IN GLOBAL HEALTH GOVERNANCE

Three-quarters of future diseases are likely to have animal origins, a process that is being fostered by globalisation, climate change and animal husbandry practices that are driven to keep pace with the rapid growth of the world's population, and in many places its increasing prosperity. Today, serious candidates threatening human health include anthrax, Creutzfeldt-Jakob disease, hantavirus and the fevers of the Rift Valley, Congo and the Nile, as well as HIV/AIDS; and H5N1 continues to represent a significant danger. Doubtlessly, the management of animal health on a global scale will be increasingly critical to the well-being of the planet and its human inhabitants. But for this to happen, significant changes need to take place in the thinking and practices of a vast range of stakeholders at local, regional and international scales. This reality has started to be acknowledged, but large gaps remain which will be difficult to bridge – for instance, between professional and organisational cultures, public and private actors, local and global actors, and sovereign and international interests. This is all rendered more complex by the interplay of power relations between actors involved locally within countries, among international donors and implementing agencies, and between international and local actors.

By way of concluding, we outline a range of challenges that lie ahead for global health governance reform, pointing to possible paths of change emerging from our analysis of the Indonesia avian influenza crisis.

1. Securing Greater Trust between Northern and Southern Countries

This may sound like naïve and wishful thinking, but is nevertheless central if global health governance is to make sustainable progress. State cooperation in this realm needs to be based on clear, mutually agreed norms, as well as a general sense of reciprocity and solidarity. This state of affairs does not currently exist. Today, for instance, Indonesia complies with its obligation to notify human cases of H5N1 to WHO, but it does not accept that this information goes public, which drastically limits its usefulness. In doing so, Indonesia interprets an ambiguous provision of the 2005 International Health Regulations in its own particular way. WHO's interpretation of the text is that information should be public, but Indonesia's view is also congruent, to the dismay of many WHO personnel. Beyond a badly written text, such diverging interpretations reflect a situation whereby countries still see full

cooperation and full information disclosure as potentially detrimental to their national interests. New incentives for cooperative behaviour need to be devised, such as dedicated health funds and emergency mechanisms. New international taxes may need to be developed to feed into rapid response emergency funds, while trying not to reduce incentives to develop preventive domestic capacities.

Adverse economic impacts, as well as issues of intellectual property rights, are an important part of the problem, feeding a sense of distrust and inspiring a "go it alone" mentality. The network of WHO laboratories to control influenza was conceived in the 1950s and is entirely centred on Northern countries – which have temperate climates and are thus most affected by seasonal influenzas. With H5N1, a new situation appeared: a virus leading to human cases emerged in a Southern country, which did not accept that it should immediately be placed at the disposal of Northern laboratories for analysis and vaccine creation. Indonesia did not want to give this genetic material for free to Northern companies as it may not have been able to afford to buy the subsequently manufactured vaccines. Important discussions have thus taken place and are still underway – and Indonesia has secured some beginnings of guarantees: a network of laboratories more open to the South, more precise terms of reference for the work of Northern laboratories, warranties about the genetic material, *etc.* Here again, new mechanisms need to be created to encourage cooperation by Southern countries. This may include the deployment of multi-country regional laboratories – as opposed to Western laboratories that may look suspiciously close to Western pharmaceutical companies. It may also call for new international laws regulating intellectual property rights related to major health threats in times of emergency.

On all these issues, the international community needs to send the message that cooperation and information sharing is the winning strategy for all countries, making the case that support will follow disclosure. This approach could be based on a range of regional and global mechanisms, as these two different scales may be needed to create solid and sustainable regimes of trust.

2. Creating Regional or International Controls over Large Agro-businesses "with Teeth"

In today's developing world, large food companies tend only to be subjected to international health standards and procedures within the context of international trade. If they do not export, they are not liable or accountable towards any such global norms. However, it is evident that a company that does not export can still carry major health risks for the

international community. In a context of highly fragmented domestic governance, large agro-businesses can find themselves essentially unaccountable, while still potentially threatening large sections of local or global society. Weak domestic regulation, as well as corruption issues, can further amplify opacity and danger.

Just as there exist international norms and inspection procedures when a private company – or a state – builds and runs a nuclear power station, it might be envisioned that similar norms and inspection regimes be applied to large animal production units, given their potential negative impact on the world at large. Although catastrophes may take place in a less visible and more delayed and insidious fashion, human casualties, and the economic consequences, potentially involved in a major "animal health accident" can easily go beyond those involved in nuclear leakages.

From this viewpoint, one may wonder if the role of OIE should not evolve to include direct, random and compulsory inspections of private production units across borders with the possibility to impose deterrent fines – such as a significant share of their annual profit and compulsory technical upgrades. This could either be done at the international level of OIE itself, or maybe more effectively and politically acceptably at a continental or regional level, where incentives to cooperate among nations over transmissible animal and human diseases are the strongest. In fact, an entire new agenda of "regional and global health security" could be developed along these lines: a capacity to classify production units according to their embedded risks; potent independent inspectors who would not be impeached by local bureaucracies and influential lobbies. Sharing and blending national sovereignties with regards to the regulation of local private sectors may well be the only way for many countries to regain some real sovereignty over their health security. There is indeed a need for some supra-national health governance insensible to local lobbies.

Viewed from the theory of collective action, creating such inspection schemes would not be a response to typical problems of the "prisoner's dilemma", but rather to domestic power relations with international impact that domestic governments are often not able to address themselves. Large agro-businesses tend to have strong economic, financial and even political means of influence that prevent them from being effectively monitored by domestic authorities. Indonesia is surely a case in point. Global health governance, here, needs thus to bypass the local political economy and local power games, offering greater legitimacy through actors that have no local ties.

The claim we are making here mirrors the analysis that is sometimes made of IMF-imposed conditions. Although often denounced, they can sometimes also be seen as a positive tool that

enables local governments to enact needed reform that they otherwise could not get moving alone, without the "good excuse" of an external constraint. In the current Greek financial crisis, for instance, the bitter remedy of cutting public expenditure did not domestically emerge in time to avoid catastrophe. The external pressure put upon the country by the EU and the IMF is proving essential for this agenda to move forward, although too late to avoid painful social shocks.

The seeds of such a regional approach to regional health security have started to emerge within the ASEAN Plus Three Emerging Infectious Diseases Programme, a programme that involves ten ASEAN countries, plus China, Japan and South Korea. Indeed, it encompasses recourse to international health inspections, and some have already been instigated in Lao PDR.

Still, any proposed regulatory approach should not only boil down to a "big stick" approach. The processes of forcing local agro-businesses to be accountable to the international community, comply with standards, and open up to inspections should occur in parallel with the provision of positive incentives. This may include international labels enhancing their reputation (the other side of the coin being the possibility of "naming and shaming"), as well as the setting up of dedicated emergency funds in case of crises – provided that, once again, the incentives created by such funds are well thought through and do not free companies from taking responsibility for their actions. In the coming decades, such funds could be provisioned by compulsory international contributions from agro-businesses categorised as "risky", according to a classification grid to be designed and agreed upon internationally. Compulsory subscription to internationally approved private or public insurance schemes could also be considered.

3. "Community-based" Approaches are not always the Best Paths; an Increase in Top-down Regulation and Capacities may also be Needed

The experience of the PDSR programme in Indonesia has had many positive aspects, but most experts now acknowledge that an "over-focus" on this approach made the international community "bark up the wrong tree". The decision to initiate a community-based approach had many sources that have been pointed to in this study, but it also leads us to make a general comment about "participatory approaches" that have largely become mainstreamed in the realm of international development endeavours.

Let us note that "community participation" (CP) has in itself become a global discourse that is now part and parcel of global governance. Over the past two decades, CP has imposed itself

as a persistent theme in the outcomes of major United Nations conferences and international agreements. This dynamic emerged most visibly in the fields of environment and development with the 1992 Rio Declaration, but it has also emerged as a significant principle of global health policies (WHO, 2004, p.44). The 1948 constitution of the WHO states that "informed opinion and active cooperation on the part of the public are of the utmost importance", but it was in the early 1970s that the need for CP in health projects started to be advocated systematically. In 1978, the full participation of the community became one of the pillars of the Health for All movement. In 1986, the Ottawa Charter, signed at the First International Conference on Health Promotion, identified CP as one of its top five priorities (WHO, 1986). A similar path was followed in the connected field of water and sanitation, where CP became a standard recommendation from the mid-eighties onwards, promoted in the context of the International Drinking Water Supply and Sanitation Decade (UNICEF, 1999, p.14).

Although we do not contest the relevance of CP in dealing with many health issues, it still needs to be recognised that, for instance, powerful commercial sectors and industries can easily be missed out within this approach. In the environmental sphere, for instance, CP schemes have been shown to be not very effective at engaging with the powerful private sector (*e.g.* Cooke and Kothari, 2001), and it is arguably the same for health issues. This is because such private actors usually lie far outside any conception of "local communities": their regulation cannot be secured by a community focus alone; the strengthening of the regulatory power and effectiveness of public authorities is required. CP methodologies are often not well suited to challenge power relations within local communities themselves, and even less so with outside actors. Meanwhile, such relations can underpin significant health risks. Over the past ten years, a growing body of research has been alerting practitioners to the limited ability of CP schemes to challenge the *status quo* or to make accountability a more widely shared duty. This calls for an expertise and capacity on the part of incoming actors, such as FAO and others, not to focus on this methodology alone, and to tap into a larger range of options, including ways of reinforcing local state capacities, even if this means lengthier processes and more difficult disbursement mechanisms.

Global governance actors have long been focusing their work and partnerships on states and communities. They now have to learn how to interact with commercial enterprises of various sizes. As one observer recalls, PDSR assumed so much importance because… it was working. To recall the quotation:

"At the beginning, there were two to three times more international personnel on non-PDSR team activities [covering markets and Sector 2, the commercial sector] than on the PDSR project. They were just not that effectively managed. They could never figure out where to start! Over about a year and a half, they did not even get a concept note together - let alone a plan. The donor was not effectively requested to fund commercial or market activities. What happened was one part of the programme moved forward effectively. We used to tell them, just start somewhere."

Undoubtedly, the early part of the learning curve is the steepest, but time is pressing…

4. Strengthening International Organisations' Capacity for Ongoing Reappraisal and Direction Change despite the Need to "Disburse" and the "Pro-poor Lens"

Turning to internal processes in the international organisations, it seems important to strengthen their capacity to identify and analyse issues independently from a range of influences – including those of governments, local industries, one-sided expertise and experts, as well as of their own organisational and professional cultures. They need to be able draw upon *multiple disciplinary viewpoints* on an *ongoing basis*. Their capacity to challenge initial or mainstream diagnosis needs to be carefully preserved – as well as their capacity to repeatedly question even strategic decisions that have already been made and may be costly to modify. The 2009 FAO evaluation is a thorough and insightful piece of work. Questions remain, however, as to why it was not accomplished earlier, and why some of its most obvious recommendations were not identified faster and more informally.

As several interviewees pointed out, "there was no really good scientific research" supporting the international community's diagnosis of the issues. There were acknowledged gaps, as well as a lack of clarity in many methodologies, and bias in the ways types of expertise employed were chosen and applied. Why was the "backyard" identified so early on as being such a critical a sector for intervention, and why did attention remain focused on it for so long, at such a financial cost? It was only in 2008 that the "experts" (of the PDSR project and of so many activities of UNICEF, CBAIC and other agencies) started to realise that the conglomerate companies did indeed play a role in the crisis – and that there would be no control of avian influenza without involving industry. As an observer noted: *"The initial diagnosis was based on semi-structured interviews and was thus dependent on trust and on the assumption that interviewees had the right kind of knowledge, which was not always the case"*. Moreover: *"Among international organisations, only a few individuals were involved.*

The ones planning were the ones carrying the tasks out. So there was a bias towards reinforcing the original assumptions. The expertise of the staff working on the issue was also focused on small-scale livestock holders".

This underlines the need to rethink how the identification and assessment of local health crises of global significance are carried out. There is a need for wide-ranging and structured expertise, forums for discussion and contradictory debates, as well as for some form of ongoing evaluation process that takes stock of new evidence as it appears, collects doubts and new ideas from the widest range of actors, and preserves a capacity to challenge important policy choices. The point is to create more transparent debate and information, as well as to minimise the time needed to adapt policies and reallocate funding if need be. As an observer put it: *"In Indonesia, new learning was slow to inform strategy… The program was made so large, so fast, that it became very unwieldy and difficult to change direction. It was a bit like steering an oil tanker"*.

In this endeavour, an important factor that needs to be managed is the requirement of donors to disburse their financial support rapidly. This tension, often driven by brief, year-long budget cycles, reinforces rather than challenges pre-existing structures and programmes. Given the need for donor organisations to demonstrate their effectiveness to donor governments or constituencies by keeping the money moving to the field, the easiest option, which might not be the right one, is often to scale up existing programmes.

Another key challenge is not to become a prisoner of any organisations' professional culture when it is marked by powerful specialisation effects, or dominant agendas (*e.g.* "fighting poverty"), which can lead to operational and observation biases. For instance, the dominant focus and expertise of FAO's personnel is centred upon small-scale, pro-poor farming, which may not prove to be the right expertise when it comes to dealing with large agro-businesses.

5. Better Defining Coordination Responsibilities

Accepting that a monolithic coordination body might increase the risk that agendas are captured and rendered less responsive and flexible, there are nevertheless well substantiated calls for better coordination of the multiplicity of projects associated with the response, and a more holistic approach to a response that is necessarily going to be variegated, together with a renewed emphasis on the multilateral approach. In matters concerning animal health, FAO would appear to be the natural choice for this role. The organisation might configure itself more determinedly as an enabling interface for any implementer wishing to work with the Ministry of Agriculture (and the local state at large), steering them if necessary towards

neglected areas and, indeed, identifying areas of activity that need greater resources and action. If better trusted by national counterparts, the organisation might also aim to open a window on the internal processes and concerns of the Ministry of Agriculture to external, international bodies and, indeed, fully represent all manner of international interests and concerns to the Ministry. This contrasts with a role as an implementer of projects for bilateral donors. Fostering long-term relationships, helping to develop long-term streams of funding, and practical application to long-term institution building would also be important front-line responsibilities for any organisation tasked with this high level coordination role. Lessons for the future include that the optimism, and even the excitement, associated with an emergency response needs to be tempered with an appreciation that the situation may prove persistently problematic and require alternative and even novel approaches, including far-reaching and politically inconvenient structural change.

6. Strengthening Central and Veterinary Authority… through Consumers

As we have seen, the national veterinary services in Indonesia are weak today. It is widely acknowledged that no real national veterinary authority is properly established. What is more, the central government establishes regulations and defines policies, which provincial governments and districts do not necessarily have to follow. Decentralisation means they are free to make and implement their own strategies. Meanwhile, the political weight of veterinarians in the central authority remains weak. For international actors, there is no easy answer as to how to ameliorate such situations.

One way to do this may be for the international community to help strengthen the voice of consumers. This may be easier for international actors to influence than modifying the political equilibriums between various forces within local states. One can only observe that whilst one billion chickens are consumed every year in Indonesia, the voices of the consumers are rarely heard.

Fast emerging markets, although led by domestic demand, do not produce strong consumer organisations. Meanwhile, states that should take up consumer concerns are often not doing so. There may thus be a role for international actors to help strengthen this part of civil society. In the long run, internal checks and balances driven by local consumers may provide more potent self-monitoring incentives for the local private sector than any international inspection.

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LIST OF ACRONYMS AND ABBREVIATIONS

ACIAR	Australian Centre for International Agricultural Research
AHD	Animal Health Directorate (MoA)
AusAID	Australian International Aid Agency
CBAIC	Community-Based Avian Influenza Control Project (DAI)
DGLS	Directorate General of Livestock Services (MoA)
DINAS	Local District Livestock Service
DKI	*Daerah Khusus Ibukota* (Special Capital Region of Jakarta)
DOC	Day Old Chicks
FAO	Food and Agriculture Organisation
GISN	Global Influenza Surveillance Network
GKSI	Indonesian Association of Milk Cooperation
GoI	Government of Indonesia
IDP	Indonesian Dutch Partnership
ILRI	International Livestock Research Institute
IPAPI	International Partnership on Avian and Pandemic Influenza
IPD	*Institut Pertanian Bogor* (Bogor Agricultural University)
KOMNAS FBPI	Indonesian National Committee for Avian Influenza
MoA	Ministry of Agriculture
MoH	Ministry of Health
NSWP	National Strategic Work Plan for the Progressive Control of Highly Pathogenic Avian Influenza in Animals
OIE	World Organisation for Animal Health
PDHI	Indonesian Veterinarian Association
PDSR	Participatory Disease Surveillance and Response
PHEIC	Public Health Emergency of International Concern (WHO concept)
SPI	Indonesian Farmers' Union
UNICEF	United Nations Children's Fund
UNSIC	UN System Influenza Coordinator
USAID	US international aid agency
USDA	United States Department of Agriculture

WAMTI	Indonesian Forum of Farmer and Fisherman Communities
WHO	World Health Organisation

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This working paper aims to aid understanding of the development of human and animal health policies in Indonesia and identify implications for global health governance. It describes and analyses power relations through three case studies with the intention of shedding light on policy processes in Indonesia, and their implications for the global community, especially in the context of the 'One World, One Health' approach and current examinations of health and food-security related global public goods.

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The Research Department of the French Development Agency (AFD) designs, undertakes and publishes research studies on a wide range of issue areas related to international development. It maintains more than 10 series of publications, most of which are freely accessible on its website. Its working paper series offers for instance over a hundred studies. The Department also organises seminars and conferences worldwide. Most of the studies are conducted in partnership with other research centres in France and abroad. In this context, the Department has notably developed a research programme with LSE Global Governance, looking at climate change, international health as well as security in post-conflict countries.

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