

PRODUCING KNOWLEDGE IN TIMES OF HEALTH CRISES

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ECOLOGICAL, PRAGMATICAL AND POLITICAL APPROACH OF EXPERTISE

PRODUCING KNOWLEDGE IN TIMES OF HEALTH CRISES

Insights from the International Response to Avian Influenza in Indonesia

PAUL FORSTER & Olivier CHARNOZ

ABSTRACT

Examining efforts to control avian influenza in Indonesia between 2005 and 2010, this article investigates why the internationally funded and designed response initially focused so much on community level “backyard” poultry farming, thus excluding, or excusing, a large and poorly regulated industrial sector from involvement in responding to disease spread and persistence. A range of biases acting on national and international agencies are identified that contributed to distorted production of knowledge and led to a focus on small farmers instead of all relevant stakeholders. These include too rapid acceptance of the intrinsic “biosafety” of industrial poultry production, a “pro-poor” development stance, the unwillingness of public and private sectors to co-ordinate, and a human rather than animal health framing. These biases were reinforced by the organisational arrangements and incentives within donor and implementing organisations. If global health emergencies are to be more effectively addressed, global and national health governance routines must better acknowledge how knowledge is produced and used in times of crisis.

Keywords: avian influenza, Indonesia, crisis management, knowledge production, organisational biases, power relations

INTRODUCTION

Health is a policy area where the production of knowledge and the deployment of expertise can have disastrous consequences should the understandings leading from diagnoses to the design of responses prove erroneous, even partially. This is all the more true in times of health emergencies, such as when facing new kinds of diseases of potentially global reach. In such situations, which require fast, yet scientifically accurate expertise, the stakes are high. Although the production of health expertise inevitably remains a social process, enmeshed in the organisational constraints and power dynamics that characterise any human activity, pathways and equilibriums are required through which it can produce, legitimate and put into use, under tough time constraints, knowledge that can reasonably be declared “minimally biased”. Although difficult to define from the constructivist perspective that we as researchers largely subscribe to, such a concept might be intuitively defined as a type of knowledge whose limits are largely structural bounded, rather than bounded by the social nature of its production.

The crisis that developed in Indonesia from 2003 onwards around the now infamous H5N1 influenza virus presents rich territory to investigate these issues, and explore processes associated with expertise under stress. This article argues that the response that developed, which was primarily designed by international expertise, and almost exclusively supported by international donors, was misplaced in its identification of small “backyard” farmers as the cause of the spread of the virus and its persistence. From this foundation, this article asks what kind of biases played out in the processes of knowledge production in Indonesia from 2003 onwards, leading to and supporting a mistaken diagnosis and erroneous policy options?

This article is organised as follows. We first provide key background information about H5N1, both in the global and the Indonesian context, and then outline our research methodology. The sections that follow make the case that a misleading focus on “backyard” farming came to dominate the international response in Indonesia. In arguing this case, we identify a range of biases that contributed to a distorted production of knowledge, including organisational arrangements, the power of certain types of expertise available in key organisations, the pressure to disburse money fast and show “results”, the well-intentioned “pro-poor” discourses and concerns that irrigate many international “development” schemes, as well as the deep-seated pre-eminence of human rather than animal health concerns in both international discourses and the arrangements of global organisations. This leads to what we suggest is a more complete and realistic picture of what “expertise” means in practice in global health governance, and we conclude by outlining a range of normative proposals that could enhance the relevance of international responses in times of global health crisis.

AVIAN INFLUENZA: GLOBAL THREATS AND NATIONAL CRISES

Before 2003, highly pathogenic avian influenza (HPAI) caused by the Influenza A (H5N1) virus is considered to have occurred rarely, with only 20 outbreaks reported globally between 1959 and 2003 (Medical News Today, 2004). Since 2003, there have been an uncountable number of outbreaks, with 62 countries reporting outbreaks between 2003 and August 2010 (FAO, 2010), including a peak of 56 countries in 2006 (OIE, 2006). As early as 2008, estimates suggested that as many as two billion of the standing global poultry population of 18 billion birds had been killed by the disease, or culled in attempts to prevent its spread.¹ In 2012, H5N1 avian influenza is considered endemic in poultry in Bangladesh, China, Egypt, India, Indonesia (which reports the world's highest proportion of outbreaks) and Vietnam, and it is now accepted that it will take decades to eliminate the virus in poultry (FAO, 2011).

To date, the H5N1 virus has remained highly species specific, with only 516 laboratory confirmed human cases and 306 deaths reported from 15 countries to January 2011 (WHO, 2012). High income countries have had very few human deaths and have effectively contained animal outbreaks (Pittman and Laddomada, 2008). Low and middle income countries, especially those with significant numbers of poultry birds (chickens, ducks, and quail) have been more challenged. Highly pathogenic strains of avian influenza, such as H5N1, kill almost all infected poultry within 24 hours, and in many parts of Africa and Asia, where veterinary services are under resourced, and chicken and eggs are important sources of protein, related economic shocks have hit small farmers and commercial poultry producers badly (Rushton, Viscarra, Guerne Bleich and McLeod, 2005). As with other influenza viruses, wild aquatic birds are the natural hosts, carrying the virus asymptotically in the gut and excreting it in droppings, and virus strains only rarely cross the species barrier to infect people, either directly or via intermediate hosts such as pigs or poultry. Nevertheless, at any time the capricious influenza virus may mutate or re-assort into a form which more readily infects humans, and more readily transmits between them, to cause a pandemic the extent and severity of which is unpredictable.

Indonesia, a large lower-middle income country in south-east Asia, has been badly and persistently affected by H5N1 avian influenza, and the disease has been considered endemic across the major islands of Java, Sumatra, Bali, and most of Sulawesi since September 2006. The virus was first detected in central Java in mid-2003, and by mid-2005 had spread to 31 out of 33 provinces, extending over a complex archipelago that stretches over 5,000 km from east to west. To date, an uncounted number of chickens – in the range of hundreds of millions – have died as a result of the virus, and the economic and social consequences

¹ Source: Charles Lambert, Deputy Under Secretary, USDA. Presentation at Sixth International Ministerial Conference on Avian and Pandemic Influenza, Sharm el-Sheikh, Egypt, 26 October 2008.

of the epizootic have been significant. As early as August 2005, economic losses were estimated at over \$500 million, with over 2.5 million workers in the poultry industry affected (Priosoeryanto et al., 2005: 146). Indonesia has also suffered the highest number of human H5N1 cases and deaths in the world. The first human case in Indonesia was confirmed in June 2005, and by 5 July 2010, 166 cases and 137 deaths had been laboratory confirmed, mainly among children and young adults (WHO, 2010). This presents a remarkably high case-fatality rate of 83 per cent.

Many factors – size, geography, ecology, politics, and socio-economics – conspire against control of avian influenza in Indonesia (Forster, 2009; Padmawati and Nichter, 2008), but this article examines why the internationally-led response initially focused so heavily on smallholder “backyard” farming, an outlook that translated into wide-ranging community-level surveillance and response systems, mass communications campaigns, and concerns about the cultural habits of Indonesians with birds. This approach significantly excluded and excused large industrial poultry producers from the response effort, although it is accepted that industrial farming can be a generator for animal diseases such as avian influenza, given its high concentration of animals with a poor genetic diversity (GRAIN, 2006). Like many countries in east and south-east Asia, Indonesia has experienced dramatic growth of industrial poultry enterprises associated with an expanding economy, increasing affluence and demand for meat, urbanisation, and the rise of supermarkets (cf. Delgado et al., 1999; Gulati et al., 2005). Following this global trend, the poultry population in Indonesia grew by between 7 per cent and 15 per cent annually between 2006 and 2008, and industrial poultry production has increased almost tenfold in the last decade (FAO, 2009b: 18).

Between 2006 and 2010 Indonesia received financial support to address avian influenza from the international community totalling over US\$175 millions (UNSIC/World Bank, 2010:1 32). The organisations charged with designing the response – primarily the United Nations Food and Agriculture Organization (FAO) working with the World Organisation for Animal Health (OIE), and the World Health Organization (WHO) – have advocated, and are implementing, a response in collaboration with national and sub-national authorities focused on global standards and technical norms concerning disease surveillance, movement controls, vaccination, and culling. Simultaneously, a wide range of communications initiatives, led by the United Nations Children’s Fund (UNICEF) and US Agency for International Development (USAID) contractors, have taken the perceived dangers of the disease to the mass population. These interventions were driven most significantly by fears of the effects of an H5N1-related influenza pandemic on the economies and populations of the global North.

The Indonesian case therefore offers a valuable example of a potent emerging global health threat; and understanding the successes and failures of the international response in Indonesia is crucial to better preparing the world for other similar crises.

RESEARCHING THE POLITICS OF KNOWLEDGE

Researching power relations in the production of knowledge 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 approached these issues through a review of relevant academic literature, policy papers and media reports, and 35 semi-structured interviews with stakeholders at international, national and local levels between September 2009 and February 2010.

Interview respondents were identified through three main channels. First, the main international agencies involved (e.g. FAO, WHO, USAID) were identified through a review of published literature and attendance lists at events such as the Sixth International Ministerial Conference on Avian and Pandemic Influenza, held in Sharm el-Sheikh, Egypt 24-26 October 2008. Their chiefs of party in Indonesia were contacted and asked if they would be prepared to contribute, or nominate a representative to do so. Second, the main Indonesian actors – government and non-government – were identified through a corpus of approximately 185,000 words created from 367 H5N1-related articles drawn from *The Jakarta Post* (which along with *Kompas*, is considered one of Indonesia's newspapers of record) covering the period 14 January 2004 to 27 August 2008. Third, a process of “snowballing” was employed whereby initial interviewees were asked who else they thought should be involved.

Verbatim notes were taken at some interviews, and audio recordings were made at others. All interviewees were guaranteed that their contributions would be non-attributable, and the results were typed up or transcribed shortly after each interview to form a 21,000 words document. Following Fischer (2003), a discourse approach was adopted in the analyses of this text, emphasising the narratives and storylines that emerged from the empirical interview-based data, along with the corpus of newspaper reports (c.f. Keeley and Scoones, 2003). Words and language are accepted as a form of action and are thus crucial data for analysis. The methodology was therefore ethnographic, accepting that ethnography should be both actively situated between systems of meaning (Clifford and Marcus, 1986), and a humanistic discipline offering “thick descriptions” – an exploration of the meanings embedded in the language and actions of social actors (Geertz, 1973). An approach allied to “grounded theory” (Glaser and Strauss, 1967; Strauss, 1987) was also employed in order to allow the investigation to follow the concerns of the informants and open up as many perspectives as possible. The concept of triangulation – “crosschecking and progressive learning and approximation through plural investigation” (Chambers, R., 1994: 1254) – was applied vigorously.

This approach, focusing on actors and their discourses, is well-suited to an investigation concerned with the interactions, overlaps, confusions and contestations involved with techno-scientific and social domains (Callon, 1986;

Callon, 1991; Law, 1986). How problems are formulated, how actors (not only people, but also organisations and objects) become “enrolled”, and how sets of interests relating to policy goals and practical concerns are “translated” are central concerns. The success of policy ideas is assumed not to be inherent in their design, but to arise from their ability to continue recruiting support and so impose a growing coherence on those who argue about them or oppose them (Latour, 1996).

In the study of global health governance, little work has been accomplished to date on understanding how power relations should be accounted for when designing international policies and institutions, and implementing interventions. Whilst a significant body of published academic work concerned with bio-medical aspects of H5N1 exists, few studies address social and political issues. Within social and political science studies, the largest body of work considers H5N1 within the emerging field of “global health diplomacy”, an amalgam of international relations and public health policy (Brundtland, 2003; Fidler, 2005; Heymann, 2006). A particular focus of this work sets Indonesia’s decision in December 2006 to cease sharing H5N1 virus samples internationally against the introduction of new international health regulations in 2005 (Elbe, 2010; Fidler, 2007; Fidler and Gostin, 2006). Another strand of social science research concerns a technocratic approach that has been called “vital systems security”: government efforts to secure key infrastructures, institutions and public services against “low probability, high consequence” events such as extreme weather, terrorist attacks, environmental catastrophes and epidemics (Collier and Lakoff, 2008: 4). In the case of H5N1, these concerns most commonly manifest in the context of planning for and managing pandemics (Bish and Michie, 2010; Hairon, 2007).

Even fewer ethnographic or anthropological studies exist. An exception, from Indonesia, is Lowe’s (2010) investigation into how the virus, wild birds, poultry and people combine to create a dynamic “multispecies cloud”. A special issue of *Anthropology & Medicine* (April 2008) considers H5N1 in east and south-east Asia, developing a “biosocial” rather than epidemiological approach, and calling for further multi-disciplinary investigations into the interactions of biological, social and ethical factors in local worlds (Kleinman et al., 2008). In the same issue, among two papers drawn from China (Liu, 2008; Zhang and Pan, 2008) and two from Thailand (Auewarakul, Hanchaoworakul, and Ungchusak, 2008; Chuengsatiansup, 2008), Padmawati and Nichter (2008) offer a pilot study investigating popular perceptions of, and the community response to, H5N1 in Central Java, Indonesia. Finding significant differences of opinion regarding blame and responsibility for transmission and the degree of risk posed to humans, the paper proposes that different forms of “practical logic” motivate backyard farmers and commercial poultry farmers, who are influenced differently by mass media, government programmes, foreign aid and rumours.

None of this work considers the power relations involved in the production of knowledge associated with designing and implementing responses to

emerging zoonotic diseases. In an attempt to fill this gap, this study investigates how power influences knowledge production using a fourfold understanding of the dimensions of “power”: 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; and 4) Productive power – influence secured through emerging discourses that provide increasing weight to certain actors (Barnett, M.N. and Duvall, R., 2005). The study pays 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; 2) Commercial actors in the large, independent and powerful poultry industry, and the smaller co-operatives and independent poultry farmers; 3) Relations between public and private actors; and 4) The dynamics between international actors and public and private domestic ones, along with the challenges of implementing an emergency response in a complex political, social and ecological environment.

It is important to understand the influence of power relations in responding to global health issues, including emerging diseases, infectious diseases with pandemic potential, and trans-boundary animal diseases. Avian influenza is a potent example that crosses all three of these categories, and Indonesia offers a useful example of how national and international power dynamics can carry complex and unexpected externalities for the world at large through their impact on knowledge production, resulting in ineffective international interventions, and challenges to the conceptual foundations and workings of global governance ideals and institutions.

RESPONDING TO AVIAN INFLUENZA IN INDONESIA: A FOCUS ON “BACKYARD” FARMERS

As noted above, Indonesia has received significant international funding to support the response to avian influenza. This has largely been disbursed through UN organisations working with the Government of Indonesia under the umbrella of the 2006 National Strategic Plan (NSP) for Avian Influenza Control and Pandemic Influenza (Republic of Indonesia, 2006). This plan, which was drawn up with the assistance of international technical experts for presentation for funding in January 2006, had components addressing human health and animal health. The former was primarily addressed by WHO, which supported the Ministry of Health in strengthening the health system, providing

drug stockpiles, training staff, and building laboratory capacity and information systems. Concurrently, UNICEF, working with the Indonesian National Committee for Avian and Pandemic Influenza (KOMNAS FBPI), focused on behaviour change communications, launching a national awareness campaign called “*Tanggap Flu Burung*” (“Take Action on Bird Flu”), which introduced four key messages: 1) Don’t touch sick or dying birds; 2) Wash your hands before eating and cook poultry well; 3) Separate new birds from the flock for two weeks; and 4) Report flu-like symptoms and seek medical attention, especially after contact with birds. Other initiatives included DAI’s Community-Based Avian Influenza Control project. These high profile national campaigns all initially focused their activities on smallholder “backyard” farmers.

The animal health component of the NSP, the National Strategic Work Plan (NSWP) for Progressive Control of HPAI in Animals 2006-2008 (Ministry of Agriculture, 2005), which was revised in 2008 (Ministry of Agriculture, 2008), had an indicative, and ambitious, budget of US\$320 millions over three years and consisted of nine elements: campaign management, enhancement of control in animals, surveillance and epidemiology, laboratory services, animal quarantine, legislation and enforcement, communications, research and development, and industry restructuring. This was a comprehensive plan to which the FAO had made a large input. An expert meeting in Bangkok, Thailand, between 21 and 23 July 2004, which included the FAO, OIE and other technical institutions, had prepared guiding principles for the region which were published in September that year (Food and Agriculture Organization [FAO], 2004). This, and subsequent FAO meetings, analysis and inputs, proved to be fundamental to the shape and direction of the response in Indonesia. Illustratively, one interviewee declared to us:

“The NSWP was drawn up almost entirely by international consultants, some of whom did not have much idea about conditions in the country. It was a good plan judged by international standards and norms, and was cheerfully signed off by the Ministry of Agriculture, [which] imagined a deluge of money coming [its] way, but with the experience we have now, one has to wonder how appropriate it was for Indonesia.”²

Since early 2006, the FAO’s core activity in Indonesia has been the Participatory Disease Surveillance (PDS) programme, which in 2007-2008 added a response component to become the Participatory Disease Surveillance and Response (PDSR) programme. This 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 (Mariner and Roeder, 2003). It quickly grew into a large and well funded enterprise. From January 2006 to September 2008, for example, PDSR teams, comprising over 2,000 trained veterinarians and para-veterinarians, reportedly conducted

2 Interview, 14 September 2009, Jakarta.

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 funding allocations and the number of central staff positions involved. FAO field delivery in Indonesia from 2005 to May 2009 totalled over US\$31 millions, of which about US\$23 millions has been spent on the PDSR programme (FAO 2009a: 23, tables 3, 4 and 5). In May 2009, there were 15 international and 60 national staff and consultants employed by FAO, with a majority of them supporting the PDSR programme.

COMMUNITY PARTICIPATION: ON THE RIGHT TRACK?

At many levels, the PDSR programme has been a success. Non-veterinarians comment admiringly on its scale, organisation and sense of purpose. The locally-orientated approach represents a significant attempt to meet the requirements of Indonesia's diverse complexity on its own terms, and the human face 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, and provided with the resources to conduct field activities and report findings into the national and local livestock service systems. Links have also been developed with veterinary services where capacity is being developed.

Nevertheless, two major questions hang over the PDSR programme, and indeed the activities of many of the other national and international agencies involved in the response to avian influenza in Indonesia: why was smallholder "backyard" farming identified so early as such a critical a sector for intervention, and why did attention remain focused on it for so long, at a such financial cost, whilst the disease continued to spread?

For many Indonesians involved with the poultry industry, this attention appeared misplaced. One respondent with long experience of the poultry sector in Indonesia said:

"It was an open secret that AI came from the poultry industry and it was being affected badly. [...] 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 [as diseased carcasses were destroyed]. This was the same with some layer farms."³

Another Indonesian official said

3 Interview, 5 February 2010, Jakarta.

“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 farms. 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 could backyard farms spread the disease so quickly all over the country”⁴

Written five years after the first official announcement of H5N1 infection, an independent evaluation of the PDSR programme (FAO 2009a, op cit) highlights the 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 may not be relevant to the control of HPAI, even if the measures that PDSR teams are undertaking were made more effective.”⁵ (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)

Official doubts as to the relevance of the “backyard” sector started to appear early, but found little traction. In May 2007, an FAO review of PDSR, which included an external review of its database, found a negative correlation between the reported human case rate and native chicken density. This was interpreted to mean that there might be a greater risk of human infection associated with marketing processes rather than contact with poultry at home, and did not lead to any greater scrutiny, or engagement, with large industrial actors (FAO 2009a: 27, op. cit). As a virologist respondent put it, in a personal memo:

“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

4 Interview, 8 February 2010, Jakarta.

5 This classification is discussed further below, but the NSWP gives the following definitions: “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)

person in a given province, the fewer 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.”

Elsewhere in south-east Asia, another early analysis by (Otte et al., 2007) determined that Thai family poultry is at lower risk from infection than commercial broilers or layer birds, and a further, more recent and extensive study (ILRI, 2009) found that the presence of industrial broilers was actually a risk factor for the occurrence of avian influenza in family poultry in Java. A respondent summarised thinking in early 2010:

“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.”⁶

The power dynamics involved in the production of knowledge that led to this dominant approach biased towards interventions focused on small “backyard” farmers are examined in more detail below.

THE CONSTRUCTION OF MEANING BY DONORS

In their works of diagnosis and understanding, the international 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 effects of this typology are rarely questioned. Nevertheless it represents an important aspect of 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. There are 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).

6 Interview, 9 February 2010, Jakarta.

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 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 2006:9)

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, an international animal health scientist, 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.”⁷

Presented with this “Sector 3.5” analysis, another respondent, a specialist Indonesian journalist, 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.”⁸

Similarly, the classification makes no distinction between layer hens, which can live several years, and broilers produced for meat, which only have an expected life span of a month or so. A reductive, technical approach does not only fail in the face of the complexity of the poultry industry in Indonesia, but also leads to a misconceived approach to the problem.

Another instance of structural power related to the social identities of stakeholders is found embedded in the professional arrangements 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, an FAO official based in Jakarta, said:

“In 2003, there was huge mortality on commercial farms. Then the big companies started vaccinating and appeared to get a grip. Given the

7 Telephone interview, 8 February 2010.

8 Interview, 12 February 2010, Jakarta.

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.”⁹

Another respondent’s analysis gives us an insider’s view, and a further understanding of what occurred within the donor community and how organisational arrangements play out in times of crisis. It could have come from a text book on social dynamics:

“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 [veterinary] 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.”¹⁰

The respondent further added:

“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.”

An international respondent to this study pointed to the reality:

“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.”¹¹

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.”¹²

9 Interview, 12 February 2010, Jakarta.

10 Interview, 9 February 2010, Jakarta.

11 Interview, 5 November 2009, Jakarta.

12 Interview, 5 February 2010, Jakarta.

Nor do the international organisations concerned with the response like it much: few, if any, see dealing with industrial corporations as part of their remit, and their mandates provide no authority to address these groups.

SHE WHO PAYS THE PIPER... THE COERCIVE POWER OF FINANCE

The authority associated with an internationally-defined mandate is relevant across a number of intersecting spheres of interest relating to the avian influenza response in Indonesia between 2005 and 2010. One respondent to this study, a senior FAO official, 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.”¹³

Another international veterinarian 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 [Participatory Disease Surveillance] 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.”¹⁴

USAID in Jakarta did not respond to our requests for an interview, but many of our respondents pointed to the coercive 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 farming sector. Another FAO official, citing a 2006 USAID document that funded the first expansion of PDSR, said:

“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.”¹⁵

13 Interview, 13 November 2009, Jakarta.

14 Interview, 5 February 2010, Jakarta.

15 Interview, 9 February 2010, Jakarta.

The respondent continued:

“... 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.”

The way forward proposed by the respondent was better collaboration and co-ordination 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 [Ministry of Agriculture], 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.”

The power dynamics inherent in international relations are beyond the scope of this article, but they are particularly potent in the case of avian influenza as a result of the mingling of national security concerns and more normative, development-orientated, global public health agendas. Given the human pandemic potential of the virus, and the potential economic effects of such an event, avian influenza response efforts are easily perceived as designed primarily to benefit wealthy nations (Calain, 2007a; Calain, 2007b), which may inhibit national responses in lower income counties. Furthermore, as global economic orders reconfigure, novel conceptions of international relations and development are emerging, remote from existing centre-periphery models (Appadurai, 1996; Sassen, 2007; Sivaramakrishnan and Agrawal, 2003). Beyond responding to avian influenza, “global” authority is increasingly fragile, and increasingly needs to be negotiated, even given widespread implementation of the 2005 International Health Regulations.

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, respondents also offered a more nuanced analysis of the situation. The international veterinarian quoted above, said:

“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.”¹⁶

Similarly, FAO – whose motto is “Helping to build a world without hunger” – leans very much towards supporting the poor and poor farmers in its mandate. Given instructions and funding to do exactly that in Indonesia, where avian influenza carries significant implications for both food security as well as human health, why should the organisation have questioned the brief? This “pro-poor” lens also sat well with the mindset of the Indonesian government, particularly the Ministry of Agriculture. An Indonesian official 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.”¹⁷

Yet another respondent, an Indonesian veterinarian, 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’ [village chickens], 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.”¹⁸

All of this supports the contention, which is no surprise to social scientists, that the construction of knowledge is not an agenda-free process. Political considerations often lie at its roots. Illustratively, an important contestation is reported to have occurred behind closed doors between USAID and the US Department of Agriculture (USDA). While USAID reports to the US Congress on the basis of its “poverty” mandate, USDA representation in Indonesia speaks for the US Department of Agriculture and has a far more specific understanding of animal health issues, notably in the context of agro-industry. As it turned out, both organisations fought for the definition of the problem and USAID found the higher ground – pushing the understanding of the situation towards a poverty related issue. An observer recalled this conflict during an interview:

16 Interview, 5 February 2010, Jakarta.

17 Interview, 11 November 2009, Jakarta.

18 Interview, 8 February 2010, Jakarta.

“USDA 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 [development] consultants are put before the expertise of USDA.”¹⁹

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 an FAO 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.”²⁰

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.”²¹

In the end, then, the need to get the money on the ground to show “effectiveness”, combined with 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 arrangements combined to produce a biased understanding of the situation.

LARGE CORPORATIONS: CONTROLLING DISCOURSE

This article has so far focused on the techno-scientific and other cultural biases of the international organisations funding and implementing the response, but domestic commercial actors involved with poultry production have also

19 Interview, 5 February 2010, Jakarta.

20 Interview, 13 November 2009, Jakarta.

21 Telephone interview, 8 February 2010.

distorted understandings. The key fear of large companies and commercial farmers is reduced demand, and on a number of occasions consumption of chicken dropped significantly as a consequence of avian influenza. The first event, which followed the government's announcement of infection on 25 January 2004, was the most dramatic. In Indonesia's capital, Jakarta, chicken sales halved within days.²² An industry analyst paints a vivid picture:

“The first price drop was the most catastrophic. It was like there was a ring around the city. They [the market traders] refused to take more because there were so many birds in the city that could not be sold. This backed up right to the farm gate. There is no cold storage. This was a shock that has not been forgotten.”²³

The second event followed the government's announcement of confirmation of the country's first H5N1 related human deaths on 20 July 2005. Again within days, poultry suppliers were reporting a plunge in demand of up to 65 per cent, market trade had slowed, and restaurateurs were complaining that people were ‘afraid to eat chicken’ and closing early.²⁴ In one weekend, poultry consumption fell by up to 70 per cent across the city.²⁵ Similar, more localised effects occurred in January 2007, after four people died with confirmed H5N1 infections in one week in Jakarta,²⁶ and in August 2007 on Bali, following two human deaths in two weeks.²⁷

Given the importance of these “consumer shocks”, the prevalence and persistence of avian influenza has always been played down in public by the large corporations, whilst at the same time they have introduced enhanced bio-security regimes to protect their operations. This represents an instance of productive power: influence secured through controlling discourse. One executive, who was interviewed only on the condition that he was representing an industry group rather than a company, and that even this group was to remain anonymous, gave a well practised analysis:

“AI hit mostly native chickens... The government tried to help the small farmers, but they did not care. Now AI is finished. There are just some intermittent outbreaks in the villages.”²⁸

What is evident is that the corporations would prefer not to acknowledge avian influenza, and are keen to deny the presence of a disease which has been proven to reduce demand for their products and detrimentally affect their bottom line earnings. As long as people keep eating chicken, their financial

22 ‘Chicken sales drop 50 percent’, Jakarta Post, 29 January 2004.

23 Interview, 16 September 2009, Jakarta.

24 ‘Chicken restaurants, vendors see sales drop’, Jakarta Post, 28 July 2005.

25 ‘Breeders hit hard by collapsing poultry sales’, Jakarta Post, 2 August 2005.

26 ‘Chicken sellers report sales slump’, Jakarta Post, 17 January 2007.

27 ‘Bali farmers start to feel the pinch of bird flu fight’, Jakarta Post, 22 August 2007; ‘Bali restaurants pluck chicken from menus’, Jakarta Post, 24 August 2007.

28 Interview, 9 September 2009, Jakarta.

returns are little affected by sporadic, or wider scale, incidence of disease, and may even be enhanced as more chicks are required to replace the birds that have perished, and more feed is required to grow the meat that has been lost as a result of disease. They may also benefit by the failure of smaller, less technically well-equipped competitors.

Commercial farmers, operating on a wide range of scales, and often tied by contracts to the large integrators or intermediaries, similarly have an interest in avoiding consumer scares. They are often dependent on the large integrators for revenue as well as technical advice and inputs, and so are vulnerable to coercive power in the shape of manipulated incentives. In the event of disease, commercial pressures force them to move their infected product to market as soon as possible, and the dangers of spreading the disease are ignored. For these groups too, the risk constructed around avian influenza relates most significantly to commercial pressures associated with not being able to sell their birds, rather than the death of the birds on their premises, and so discourse related to the disease is similarly suppressed.

A final potent power dynamic evident among domestic actors is the structural power embedded in the often opaque relations between conglomerate commercial concerns and national and local governments. Since 2003, the industry has grown rapidly under the control of large-scale oligopolistic companies, and with three large companies responsible for 70 per cent of poultry production (Sumiarto and Arifin, 2008: 10), and with the two largest having nationally significant turnovers of US\$1.6 billion and US\$1.45 billion in 2009,²⁹ many respondents referred to the political connections enjoyed by these large corporations, including through family links, as well as their capacity to “buy in” key actors through passive or active corruption, and to influence the removal of civil servants who are not sympathetic to their views.

One Indonesian government official declared:

“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 can't control.”³⁰

In this, public-private interactions in the poultry industry might be seen to differ little from those in other areas of commercial and everyday life in Indonesia, which was ranked equal 110th in Transparency International's 2010 Corruption Perceptions Index.³¹ Despite recent improvements, all post-1997 administrations suffer a degree of continuity with those of the authoritarian past, which were characterised by institutionalised corruption, opaque processes and collusion with business interests; and corruption, deeply embedded patron-client networks, and elite capture are widely perceived to remain endemic (Jamie, 2009; Kimura, 2011; Webber, 2005). Although Erawan

29 Globe Asia, August 2010.

30 Interview, 11 February 2010, Jakarta.

31 See: <http://www.transparency.org/cpi2010> [accessed 4 August 2011].

(2007) reports significant variations in the style of politics across the country, with local state capture and rampant corruption in some jurisdictions, and deepening democracy and the emergence of effective government in others, recent political decentralisation has, according to many commentators, made the situation worse (Roth, 2007; Simandjuntak, 2009).

Political decentralisation, especially in its highly variegated Indonesian form (World Bank, 2003), also conspires against almost every principle of stamping out an infectious animal disease. This requires comprehensive, consistent and coordinated action across the whole infected area. But with priorities, competencies and funding varying across 456 autonomous regions (McLeod, 2008), and with veterinary services an “easy target” for cost cutting (Normile, 2007: 31), national guidelines are only implemented when local officials think it is necessary and have local support. These dynamics are compounded by the lack of credibility the national government has to engage with the poultry industry following a catalogue of misguided interventions dating back over 40 years (Rusastra et al., 1988; Yusdja, 1996; Yusdja et al., 2004), and, as has been discussed above, the desire of non-government actors, large and small alike, to suppress even any discussion of the issue.

The national government, although rhetorically adopting the prescriptions of the international expertise that designed the response regarding vaccination, culling and movement controls, as well as local-level surveillance, and enthusiastically accepting the funding that came with it, has then been hampered in seeing any programmes implemented consistently across the country by the political complexities of decentralisation, the lack of technical capacity and credibility to determine and enforce any national regulations, and collusion with conglomerate industrial actors. This has resulted in a total failure to confront the industrial poultry sector and address its practices, and has supported the biases of the international organisations that leant towards a diagnosis and a response focused on smallholder agriculture. Effectively, the industrial sector has been left entirely to its own devices.

Another senior government official, commenting on the weak and poorly enforced regulatory structure, stated ruefully:

“We have difficulty coming to this poultry industry. They have the power.”³²

Practically, these complex public-private interactions, which are often opaque and informal, present one of the most pertinent factors affecting the response to avian influenza in Indonesia; and the analytical frame of this article provides an explanation as to why. The corporations have significant productive power to control discourse, and have used it to suppress understandings as to the extent and effects of the disease. They also have significant coercive power in the shape of the ability to manipulate incentives for the majority of poultry farmers, and their well-established structural power allows them to dominate

32 Interview, 8 February 2010, Jakarta.

government actions in a way that does not best serve disease control. It is telling that large companies have not approached donors or the government for financial or even technical support. Their entire strategy has been about managing behind closed doors.

“HUMANS FIRST”: FOCUSING ON SYMPTOMS RATHER THAN CAUSES

A final important power dynamic associated with the production of knowledge in the response to the avian influenza crisis in Indonesia concerns the dominant framing among international actors of the epizootic as a threat to human health. Although the number of reported human cases of H5N1 related influenza, and deaths, has remained low, several respondents suggested that the backyard emerged as focus for intervention because this 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.”³³

Another respondent, an Indonesian veterinarian, put it differently

“The backyard was where people were dying and this was where people had contact with poultry.”³⁴

Another international official 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.”³⁵

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 (WHO, 2005). However, by 28 September 2006, there had been 68 confirmed cases in Indonesia of which 52 had been fatal (WHO, 2006), and although studies have not always been definitive, contact with poultry is considered to have been the route of exposure in most cases.

This is not to suggest that this understanding of disease transmission is incompetent, but against the background of the global pandemic threat, and global media concern, it is suggested that this focus on human cases among

33 Interview, 11 February 2010, Jakarta.

34 Interview, 9 February 2010, Jakarta.

35 Interview, 5 February 2010, Jakarta.

those living with poultry in the Indonesian countryside had detrimental effects in assessing with precision the key sources of the problem, as well as in determining the correct policy response. As one respondent pointed out, one of the consequences was that responses were modelled on infectious diseases between humans rather than animals:

“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.”³⁶

This approach might be taken as example of both the structural and productive power human health concerns have over those related to animal health, and the pre-eminence of medical perspectives, as compared with veterinarian concerns, within global foras and organisations. It also again brings into focus the biases discussed above regarding the arrangements of the international organisations involved in the response in Indonesia that have far more extensive experience of dealing with human diseases, such as HIV/AIDS, than those of animals.

CONCLUSION: STRENGTHENING THE ONGOING REAPPRAISAL OF ORGANISATIONAL KNOWLEDGE

This article has argued that a range of factors concerned with power, organisational arrangements, and the production of knowledge have interfered with the capacity of nearly every organisation involved with responding to avian influenza in Indonesia to diagnosis the situation accurately, and to formulate and implement effective strategy. International and national agencies alike too readily accepted the idea of the inbuilt “biosafety” of industrial poultry production, and none were prepared to engage with the industrial sector, which was keen to exclude itself. In particular, the normative “pro-poor” mandates that characterise many international and bilateral organisations, the political concerns of national and local government, and perceptions of avian influenza as a human health issue, distracted attention from the large industries,

36 Interview, 9 February 2010, Jakarta.

and objectives related to supporting their sanitary procedures. Furthermore, the need to disburse funds, so as to show “effectiveness”, hindered analysis concerning the best strategic angles of action. Consequently, smallholder “backyard” farmers, who had little voice in any plans for responding to the epizootic, were cast as scapegoat, conveniently available for both blame and remedial action.

Ultimately, these biases may be explained as the expression of a certain view of “scientific modernity”, a view that crystallises specific power relations between various organisations, discourses, perspectives, disciplines and concerns. These include dynamics such as: a deep-seated faith in industrial processes as compared to “traditional” ones, leading to little consideration of local contexts; a “political correctness” that imposes a “pro-poor” focus in international interventions, even when dealing with a complex public health crisis. These dynamics may also be considered as an adaptation strategy of rational actors to multiple constraints: the need to provide an emergency response; the temptation to adopt known and tested models despite a different context; the requirement to keep money moving and show results; and a reliance on the expertise available, that unavoidably frames the object under scrutiny.

Such dynamics largely reflect the organisational and professional arrangements of international co-operation agencies, as well as the weight and structural power of constituted forms of expertise in their planning and operational procedures. In Indonesia, between 2005 and 2010, there were acknowledged and unacknowledged gaps in scientific understanding, a lack of clarity in many methodologies, and bias in the ways types of expertise employed were chosen and applied, which went insufficiently challenged for too long. 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.

Addressing these issues, however, involves substantial rethinking in the way expertise is mobilised, diagnoses made, and strategic options challenged, especially in times of global health emergencies. From the Indonesian example, we can see that the capacity to identify and analyse issues independently of governments, local industries, and one-sided expertise, whilst being fully apprised of the concerns of such groups, needs to be developed, as well as the ability to challenge initial or mainstream diagnoses, even if this involves questioning decisions that have already been made, and may be costly to modify.

More broadly, these issues underline the necessity of rethinking how the identification, assessment and management of local health crises of global significance are carried out. Wide-ranging and structured expertise is doubtlessly required, but so are forums for discussion and contradictory debates, and forms for monitoring and evaluation that take stock of new evidence as it appears, collects doubts and new ideas from the widest range of stakeholders, and preserves a capacity to challenge policy choices and directions at the highest levels. In short, a wide range of multi- and inter-disciplinary viewpoints need to be available, and drawn on continuously. The objective is to create more

transparent debate and information, and to minimise the time needed to adapt policies and reallocate funding if required.

In these rearrangements, an important factor that needs to be considered is the requirement of donors to disburse their financial support rapidly, and to show “effectiveness” to donor governments or constituencies. 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 keep 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 organisation’s professional arrangement 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.

As 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, the management of animal health on a global scale will be increasingly critical to the well-being of the planet and its human and animal inhabitants. In particular, a set of questions emerges as to the future role and involvement of the established international organisations in responding to global disease threats, particularly as the modernist, universalist conception of a global public good that has underpinned their activities for the last 50 years gives way to more complex political framings. As economic and political power continues to shift from established to rising nations, the authority of such groups, their funding sources, and their assumed rights to intervene, will come in for increasing scrutiny and debate. In this respect, H5N1 in Indonesia provides a potent example of a broader set of issues of vital relevance for the future.

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RESUME : LA PRODUCTION DE CONNAISSANCES EN TEMPS DE CRISE SANITAIRE. QUE NOUS APPREND LA RÉPONSE INTERNATIONALE À LA GRIPPE AVIAIRE EN INDONÉSIE ?

Passant en revue les efforts pour contrôler la grippe aviaire en Indonésie entre 2005 et 2010, le présent article examine pourquoi la réponse financée et mise au point par la communauté internationale s'est, à l'origine, essentiellement focalisée sur les petits élevages de volaille de basse-cour, excluant ou exonérant ainsi un secteur industriel important et peu réglementé de la responsabilité d'endiguer la propagation et la persistance du phénomène. Un certain nombre d'*a priori* pesant sur les agences nationales et internationales sont identifiés, qui ont contribué à fausser la production des connaissances et conduit à se concentrer sur les petits éleveurs plutôt que sur toutes les parties prenantes concernées. Ceci inclut l'admission trop rapide de la « biosécurité » comme inhérente à la production industrielle de volaille, le parti pris de politiques de développement axée sur les plus pauvres, l'absence de volonté de coordination des secteurs public et privé, et une définition de la santé basée plutôt sur la santé de l'homme que sur la santé animale. Ces *a priori* ont été renforcés par les modalités et les incitations organisationnelles propres des donateurs et des organisations chargées de la mise en œuvre. Pour traiter plus efficacement les urgences sanitaires mondiales, les procédures de gouvernance sanitaire globale et nationale doivent mieux prendre en compte la manière dont les connaissances sont produites et utilisées en temps de crise.

Mots clés : grippe aviaire, Indonésie, gestion de crise, production de savoir, biais organisationnels, relations de pouvoir

RESUMEN: LA PRODUCCIÓN DE LOS CONOCIMIENTOS EN TIEMPOS DE CRISIS SANITARIA: ¿QUÉ NOS ENSEÑA LA RESPUESTA INTERNACIONAL A LA GRIPPE AVIARIA EN INDONESIA?

Una vez expuestos los esfuerzos para controlar la gripe aviaria en Indonesia entre el 2005 y el 2010, el presente artículo examina la razón por la cual la respuesta financiada y elaborada por la comunidad internacional se ha enfocado, al principio, principalmente en las pequeñas ganaderías de traspatio de aves, excluyendo o exonerando de esta forma un sector industrial importante y poco reglamentado de la responsabilidad de contener la propagación y la persistencia del fenómeno. Se ha identificado un número de *aprioris* que pesan sobre las agencias nacionales e internacionales y que contribuyen a falsificar la producción de conocimientos. Esto condujo a una concentración sobre los pequeños ganaderos en vez de interesarse en todas las partes-interesadas dado que la producción industrial es percibida como un espacio de "bioseguridad", que existe un prejuicio de

las políticas de desarrollo orientadas en los más pobres, que se observa una ausencia de voluntad de coordinación de los sectores público y privado, y que prevalece una definición de la salud basada más bien en la salud del hombre que en la salud animal. Estos aprioris han sido reforzados por las modalidades y las incitaciones organizacionales inherentes de los donadores y de las organizaciones a cargo de su ejecución. Para tratar más eficazmente las urgencias sanitarias mundiales, los procedimientos de gobernanza sanitaria global y nacional deben tomar en cuenta mejor la manera en que los conocimientos son producidos y utilizados en tiempos de crisis.

Palabras claves: gripe aviaria, Indonesia, gestión de crisis, producción de conocimientos, sesgos organizacionales, relaciones de poder