

One World, One Health – From principles to action

Perspectives from the expert meeting held in Brighton, UK, 26-27 February 2009

Co-hosted by the STEPS Centre, Institute of Development Studies, University of Sussex and Chatham House, London and supported by DFID through the World Bank

Introduction

The strategic framework for reducing risks of infectious diseases at the animal-human-ecosystems interface, '*Contributing to One World, One Health*', presented at the inter-ministerial meeting in Egypt in October 2008 identifies six strategic foci. These are:

- Initiating more preventive action by dealing with the root causes and drivers of infectious diseases, particularly at the animal–human–ecosystems interface.
- Building more robust public and animal health systems that are based on good governance and are compliant with the International Health Regulations (IHR) 2005 (WHO, 2005) and OIE international standards, with a shift from short-term to long-term intervention.
- Strengthening the national and international emergency response capabilities to prevent and control disease outbreaks before they develop into regional and international crises.
- Better addressing the concerns of the poor by shifting focus from developed to developing economies, from potential to actual disease problems, and to the drivers of a broader range of locally important diseases.
- Promoting wide-ranging institutional collaboration across sectors and disciplines.
- Conducting strategic research to enable targeted disease control programmes.

The February 2009 expert meeting (see Appendix 1 for a participants list) agreed that these strategic foci were good starting points. But how can these be translated into practice? What are the wider policy and implementation challenges? What are the institutional and governance implications of a One World, One Health (OWOH) approach? The following sections offers a summary of the discussions at the expert meeting, offering a series of principles for the way forward – and for wider deliberation at forthcoming meetings at Winnipeg (March 2009) and later at Chatham House, London.

Reflections on the experience of the HPAI response

A starting point for the meeting was to reflect on the experiences arising and lessons learned from the response to HPAI both internationally and in SE Asia, and particularly in Cambodia, Vietnam, Indonesia and Thailand (see Appendix 2 for sources).

The countries represented some major contrasts – in terms of the importance of agriculture in the overall economy, the structure of the poultry industry, the level of aid dependence, the significance of other risks in national policy and popular perception, the structure of the state and governance responses and degrees of decentralisation and the focus of the HPAI response – including vaccination, culling (with and without compensation), behaviour change efforts etc. Similarities were also evident,

including the prevalence of poorly functioning bureaucracies and the significance of patronage relations in policy processes (Appendix 3).

Papers were presented documenting the experience, and a rich comparative analysis of lessons emerged. A number of recurring themes were evident. These included:

- Standard policy/technical solutions don't work, context matters (*including the economic structure of production, but also political contexts*)
- Technocratic, expert-driven and top-down solutions falter in the face of bureaucratic and political complexity, patronage and the 'envelope culture' (*it's not just paper policy but implementation and delivery that are critical*)
- Winners and losers in achieving 'global public good' aims – there are real political, commercial and other interests at play, and poor people's livelihoods are often the losers (*whose public, whose goods? Whose world, whose health?*)
- The global institutional/organisational architecture and international aid often jars with local settings, resulting in resentment, blocking and lack of momentum (*responsiveness and accountability, not just efficiency and effectiveness must be part of the response*)
- Socio-cultural constructions of risk, threat and the role of poultry define perceptions and response (*there's a need to go beyond a focus on behaviour change, to responses that articulate with embedded 'cultural logics'*)

These findings present some challenges when considering how to move from the stated strategic aims of the One World, One Health initiative to action.

Generic principles for OWOH approach

Some generic principles to guide a OWOH approach were outlined by the meeting. These should, it was argued, act as the basis for the assessment of any intervention. They were often absent – in whole or in part – in many HPAI response interventions at both at international and country level. Key assessment criteria for any proposed interventions should therefore include:

- *Stakeholders* – who are the key actors, and what is their role?
- *Poverty and livelihoods* – what are the consequences for people's livelihoods, incomes and well-being?
- *Holism* – how integrated is the approach across diseases, sectors and disciplines?
- *Uncertainty* – how is uncertainty and ignorance being addressed?
- *Accountability* – what accountability mechanisms exist - particularly to those who will be affected?
- *Sustainability* – how will such an intervention be sustained, when resource or conditions flows change?

In addition, four cross-cutting themes were identified as being especially important. These were: i) Making a pro-poor, livelihoods-oriented approach central; ii) Benefitting from local innovation for

surveillance and response; iii) Building the resilience of disease response systems; iv) Being realistic about the politics of a One World, One Health response.

1. A pro-poor, livelihoods approach to OWOH

The OWOH strategic framework emphasises the importance of a pro-poor approach. In the emergency settings that have dominated the HPAI responses, however, these have often been absent or found wanting.

But what does a pro-poor or livelihoods approach actually mean? Is it simply about keeping animals alive? Is it about keeping people in a job? Is it about staying healthy? Or does it relate to finding alternative sources of livelihood? There are no simple metrics, and impacts and consequences depend ultimately on contexts.

However such complexity should not mean inaction. The following were suggested as key elements of a OWOH approach in any setting:

a) Baseline studies – identifying who are the poor and where they are.

Basic survey and mapping in potential zoonotic disease 'hot spot' areas is required. Market chain analyses can offer a useful approach, linking consumers with producers across a value chain. Livelihoods impacts may stretch beyond the rural production setting especially in rapidly restructuring economic settings, to include industrial production and processing, where labourers may be key stakeholders. While there are many scattered surveys of this sort, they have not been brought together systematically. This is an important challenge, as basic data is required before any assessment takes place, and in a highly dynamic disease situation, there may not be time to undertake new surveys before making decisions.

b) Local perceptions and understandings – what do people think

A recurring theme in the case studies was the mismatch between local and expert understandings of disease, its dynamics and consequences. Diseases are part and parcel of people's everyday experience, and local responses often have their own 'cultural logics'. Livelihood responses are often guided by these rather than by more technical rationales. A livelihoods-oriented approach to OWOH must take local understandings and perceptions seriously. These should be appreciated in their own right – potentially as part of new innovations (see Theme 2, below) – and not simply responded to by an argument for 'behaviour change'. Baseline studies which focus on cultural and livelihoods responses on the ecology-disease interface across potential zoonotic disease hotspots need to be a key feature of any OWOH approach.

c) Scenario planning – developing options

Based on baseline information and understandings of local perceptions, intervention scenarios can be outlined in relation to possible disease outcomes and responses. Clearly such contingency planning is based on highly incomplete knowledge, much uncertainty and not a

little ignorance about disease dynamics and consequences. However, as part of pandemic preparedness planning, some simple scenario planning exercises involving all stakeholders – across sectoral expertise, within different government departments, and involving potentially affected groups as well – may help elaborate possible livelihood and poverty impacts of different types of disease and different types of response. Trade-offs between these factors would then be explicitly addressed as part of advance planning.

d) Linking emergency and development responses

Experiences from the HPAI response highlighted the negative consequences of separate emergency and development responses. These are reinforced by bureaucratic routines, professional foci and funding streams. The consequence is that separate programmes are launched, which often remain poorly connected. Livelihood and poverty concerns must be part of emergency responses, and a continuum between emergency/humanitarian responses and long-term development developed in both thinking and practice. This has been a lesson from other disaster/emergency responses in other areas, but does not seem have been learned for the human/animal health domain. A minimum 'no harm' criterion needs to be applied to all emergency interventions, but ideally a more livelihoods-oriented approach needs to be embedded in emergency planning and response. This requires response systems to be explicitly linked to long-term development goals, not just immediate disease response.

With these elements in place a OWOH the strategic goal of “better addressing the concerns of the poor” can be realised. The tools and techniques for achieving these four elements are well known in the context of development work, but perhaps less so in health and veterinary interventions. The challenge will be to institutionalise these in the processes and procedures of organisations at national and international levels charged with emerging infectious disease responses. This will require some basic training and capacity building, combined with revisions of guidelines and operating practices. Participants warned that incentives would need to ensure that the default 'reversion to type' did not happen, and that a poverty/livelihoods approach remained at the forefront of analysis, planning and response systems.

2. Local innovation systems

Standard health and veterinary interventions responding to the HPAI crisis were found wanting in a number of cases. This is perhaps not surprising given the huge diversity across the countries studied (see Appendix 3), let alone the local diversity in particular settings. Most standard responses which populate the WHO, FAO guidelines for disease response and are replicated in country plans assume well-functioning health and veterinary systems, rapid and efficient responses and the availability of epidemiological information and technical expertise. In many countries across the developing world – and indeed in some parts of the so-called developed world – these assumptions do not hold true. Health bureaucracies do not function well, information is poor, inaccurate or unavailable and technical capacities are weak.

There is of course a very good argument for improving such capacities worldwide. Substantial efforts have been invested as part of the HPAI response to do this, and some significant achievements have been recorded. But there remains a long way to go, and this is likely to be the case for many years to come.

The question arises: are there are other sources of capacity and innovation that can be drawn on, rather than assuming that an ideal-type, centrally-organised, bureaucratic system will always supply the answers? This question is as relevant to areas where health systems function relatively well, as where they are poorly performing, as new sources of informal and distributed innovation may be critical in improving functioning and response in all settings. This is particularly the case when such systems are under pressure (due to funding squeezes), are rapidly changing (as new private health providers enter the scene) and where diseases are new and emerging (as with zoonoses).

A OWOH approach cannot be based on a 'one size fits all' fix. While it may be appropriate to think globally, we always need to act locally. And that means being attuned to context – of livelihoods, ecology and disease dynamics. Systems of surveillance, disease management or control and the building of disease response systems need to be congruent with local social, political and cultural realities. Three issues were highlighted in the meeting:

a) Building on practices that make sense locally

Too often response systems derive from forms of technocratic planning that, when they land in a particular place, don't work. Cases of this phenomenon were widely evident in the HPAI response. How can people in particular places be mobilised to a very high-sounding OWOH mission? What are the cultural and institutional repertoires that will get people involved? What institutional and collective action arrangements can be capitalised upon? How do people organise themselves on other issues? How can a OWOH theme be integrated in other concerns and organisational forms? How do local interpretations of 'identity' (say in relation to the state or outsiders) affect people's response? How do people interpret 'responsibility' (to public or even global health)? And what is the quid pro quo for participation?

These are all thorny issues and require attention to the politics of mobilisation and participation. Certain ideas, metaphors and mobilising concepts may have traction, while others may not, and any OWOH effort will have to embed itself in such concepts practices and approaches.

b) Local perspectives

As discussed above, local perspectives matter. Without effective articulation with local 'cultural logics' and embedded understandings of risks, diseases, animals and epidemics, externally derived interventions often fail. Such failures are sometimes seen in terms of unruly resistance to what is deemed to be technically correct and broadly beneficial. But resistance (avoidance, foot-dragging or outright protest) may have other roots beyond ignorance or obstinacy. Thus uptake of poultry vaccination may be low, as people don't trust those who administer it; interventions may for example be seen to conflict with cultural or religious beliefs; or the efficacy and effects of such interventions may be questioned – as with the case of the egg-laying abilities of vaccinated poultry. Behaviour change approaches, so central to the social marketing of health interventions, may founder too on this basis, as existing behaviours may have more solid foundations.

But working with local social and cultural beliefs may pay dividends, and must be central to a OWOH response. Building on existing social practices may be central to new surveillance and response strategies, for example. Thus in relation to poultry vaccination – even where it was banned, those in

possession of prize cocks used for fighting sought out vaccination. Building on cock-fighters' own networks may be a key starting point for new efforts focused on vaccination or effective disease spotting and management, given that such cocks are highly valued culturally and economically, and cock-fighters are well organised in many countries in SE Asia. For surveillance approaches, local knowledge of disease dynamics in local contexts may be critical. Participatory approaches to epidemiological understanding have been widely used, and could be extended. Local people may also understand how diseases change – and have words, and explanations for this – between epidemic and endemic phases, and such insights may provide the basis for more locally attuned surveillance efforts, avoiding some of the problems of poor or inappropriate reporting.

c) Existing social and political structures

Much of the challenge of the OWOH is institutional and organisational. With a shift in emphasis from an 'outbreak' approach to one where disease scanning and more passive, on-going surveillance is needed, the challenges increase. The outbreak mode is associated with well-known and well-developed mechanisms. These remain critical, and again this is no argument for down-playing them. But a OWOH needs more than this. How is it possible to detect disease drivers, to identify new disease events before any outbreak and to respond to highly dynamic and uncertainty ecological contexts?

Here linking in to local organisational structures is critical. At the village level, this may be voluntary associations, womens' groups, cock-fighting clubs, farmers' unions or hunters' guilds. These need to link with community-level workers – such as community animal health workers or community health workers (or field-level personnel with combined responsibilities), and in turn to both decentralised government and commercial players. Building trust is the watchword, given the challenge of reporting, and identifying novel events and processes. Questions of local social relations and power dynamics must be addressed. Reporting and surveillance may result in risks for certain individuals or stigma for others. Local 'community' structures are never neutral, and there is a danger of playing into existing divisions of ethnicity, wealth or gender.

Again, there are many lessons to be drawn from other areas of development. Enthusiasm for participatory, community development approaches have necessarily been tempered, as challenges have arisen. Astute assessments of power dynamics and a multi-pronged approach to diverse, and always differentiated, communities will be needed. Building on existing social and political structures is always essential, avoiding the dangers of duplicating and replicating for new functions.

Thus, told in one way, the failures of HPAI interventions in particular places can be seen in terms of the need to build capacity, change behaviour and fill gaps (in knowledge, technology and so on). But looking beyond the failures of centrally-designed, technical responses we may gain insights into new innovations. These are often hidden from view; they are widely distributed but usually poorly documented; they may relate to social and organisational practices more than technologies; and they are often highly location-specific their practices and consequences. Such innovations are thus less amenable to technical manuals and international guidelines, but may be vital in realising OWOH goals. For this reason, a systematic attempt to document, galvanise and link local innovation in disease surveillance, management and control must be centrally part of the OWOH approach.

3. Building resilience

Building the resilience of disease response systems across scales – from the global to the local – must be a central part of the OWOH approach. A resilient system is one that can bounce back from and adapt to shocks and stresses; it must be able to cope with uncertainty and surprise; and it must be able to persist in the face of new challenges, including changed funding and resources.

Understandings of resilience will differ across stakeholder groups. In some quarters, the ability to protect rich economies and populations may take precedence. For others, the ability to respond to disease events without undermining livelihoods may be the most important factor. Defining what resilience means for whom is an important task in building systems. Competing versions and visions must be contrasted and negotiated. Resilience-building is thus not just a technical exercise – it is deeply political.

The challenges run to the heart of the dilemmas faced by the international response system. How resilient is the current system? Would it cope with a new disease pandemic? How flexible and responsive are such systems to new surprises? Are the institutional and organisational arrangements characterised by high reliability or not? While positive stories can be told, the overall assessment is not rosy. The HPAI response has certainly built capacity and invested in technologies and systems – labs, surveillance systems, pandemic preparedness plans, drug stockpiles and so on – but has it built resilience? Too often there has been a tendency to build systems that assess, control, manage and regulate on the assumption of an ‘outbreak’, using the standard techniques of risk assessment and management. But what if something else happened? Would systems be able to cope with real surprises? How effective are they at dealing with uncertainty and ignorance? And does a focus on risk and its assessment (assuming we know the probabilities of certain things happening), actually give a false sense of security, and so undermine resilience and the capacity to respond?

Of course no-one knows because ‘it’ (whatever ‘it’ is) hasn’t happened. But concerns were expressed at the meeting, that a lack of attention to resilience has cut across recent responses and that this needs to be addressed urgently by the OWOH approach. Building resilience and ensuring high reliability responses requires a number of things:

a) Improving knowledge

Knowledge needs to be derived from a variety of sources (including ‘non-expert’ local knowledge) and disciplines, aimed at seeking out patterns and identifying processes. In a messy, complex world where high reliability is the aim, pattern recognition is a key first step in building organisational responses. But this goes beyond baseline surveys and censuses, and requires cross-scale and trans-disciplinary integrative analysis. Such capacity is absent in the main agencies faced with this challenge, and needs to be built.

b) Mapping and linking roles and responsibilities

A OWOH approach is characterised by multiple actors, acting across sectors and disciplines and at the interstices of organisations, often with unclear mandates and sources of authority. This complexity may be a recipe for disaster if not effectively managed. A basic mapping of key players is a first step. In multi-faceted, plural health systems, those with roles and responsibilities stretch way beyond the usual suspects (government public health and veterinary services) to

private sector producers, marketing associations, private sector suppliers, farmers' organisations and more. One tendency in the face of such diversity is to aim to streamline and coordinate, increasing efficiency and reducing overlap. But this may be the wrong reflex if resilience is the aim. Here overlap, redundancy and competition may be virtues, allowing effective organisational complexes to emerge.

c) Governance – enhancing accountability and responsiveness

Of the many potential actors involved, who should be at the table, and how should decisions be made? The key criteria of accountability and responsiveness are essential here. There is never going to be one 'ideal type' organisational arrangement that will confer resilience and assure high reliability responses. It depends on the governance context – who has power and influence, and who does not; the degree to which patronage relationships foster or undermine information flows and responses; and the way central and more decentralised functions interact. But a resilient system must be accountable – to diverse users, and, as argued above, in particular to those whose livelihoods are most likely to be affected both by any disease spread or its control. Most response systems develop accountability mechanisms that are vertical, from the top down and only in relation to the funder. Instead, funders (including governments) need to become more accountable to users and implementers of disease response systems. This requires some basic thinking about organisational design, with in-built checks and balances. Trust is once again a key feature here. Where trust among multiple stakeholders is high, more resilient systems are more likely to be the result. This requires open deliberation on goals, options and strategies, avoiding the technicians 'we-know-best' response so evident in many recent experiences. In the end, more accountable based on solid trust relations also tend to be more responsive, as there is greater demand, more transparency and less likelihood of poor participation.

d) Improving the capacity to learn

Learning about what works and what does not is critical in any response system. Lessons have of course been learnt through the HPAI response, but these have often not been incorporated into new ways of acting. Here donors, technical agencies and national governments have been found wanting. Adaptive management is the key to an effective OWOH response, and this requires continuous testing, learning and adapting. This allows approaches to unfold in ways that are responsive to local settings, and avoids the one-size-fits-all approach which has been so prevalent. Again, while obvious, such adaptive learning approaches are not always compatible with existing institutions and protocols, so deep-seated are the assumptions about a 'right' technical response. Such learning needs to be facilitated and encouraged, however. New professional skills embedded in existing organisations can help these. Such 'high reliability' or 'resilience' professionals need to be charged with seeking out lessons ('pattern recognition'), convening debates about options ('building scenarios'), experimenting with new options ('testing') and linking macro design with micro operations ('tracking') through reporting back, adjusting procedures, institutions and funds as a result.

e) Long-term investment

Resilience is not built overnight. It takes time, patience and commitment. This is why the emergency, outbreak focus is so undermining. Short-term efforts with short-term funds cannot

allow the painstaking process of building resilience to emerge. And without such resilience being built, the emergencies repeat themselves. It is a self-fulfilling and destructive cycle. OWOH approaches will require long-term investments – at a minimum of 10 year funding commitments. These will have to be complemented by some systematic learning across scales and sites, defining over time what is a resilient emerging infectious disease response system. Such an investment – seen perhaps as a long-term insurance policy – must be more effective (and certainly more cost-efficient) than the ‘permanent emergency’ often seen otherwise.

4. The political realities of a OWOH approach

The final theme highlighted at the expert meeting was the need to ‘get real’ about the politics of a OWOH approach, given the existing configuration of institutions, organisations and political power in the global health field. OWOH is an appealing, all-encompassing slogan. But can it work in a multi-polar world, where certain voices count about others? Because ‘we’ (the north, the west) care, why should others too? By not asking ‘whose world, whose health?’ the slogan may act to exclude, reinforcing the ‘Out of Africa or Asia’ narratives so prevalent in global health security discourse. Maybe outside Europe and North America, primary priorities are legitimately elsewhere and not focused on the next pandemic. If OWOH is to be a genuinely inclusive concept, such wider politics need to be addressed.

A OWOH approach suggests a global, inclusive approach, cutting across sectors and old boundaries. But is this compatible with the post-Second World War organisational architecture of the UN and other agencies, divided as they are by fairly entrenched sectors, boundaries and disciplinary and professional silos? Is a OWOH approach even legally possible given the mandates, standards and requirements of different agencies? How does a OWOH deal with the primacy of national sovereignty in the international political system – what happens when an individual nation does not play ball? And, finally, does an appeal to a global public good approach, led by the international system, have any traction in a setting where the private sector in increasingly pluralised health delivery systems holds such sway?

And in addition, beyond these wider geopolitical questions, other concerns centre on the feasibility of an approach premised on encouraging interaction among functioning bureaucratic agencies in situations where the applications of funds are not subject to corruption, patronage or nepotism?

In sum, is OWOH doomed to failure given the existing politics of the real world? The consensus at the meeting was not so gloomy. A number of key challenges were highlighted, however:

a) Reconfiguring the global organisational architecture?

There is no consensus on what the ideal configuration of international agencies and organisations for a OWOH would be. Most, but not all, people are not in favour of a new organisation with a new mandate in this area. Many are circumspect about top-heavy and self-perpetuating coordinating groups. But others are sceptical about a voluntaristic approach, that assumes that all is well and that OWOH approaches will ‘just’ happen. OWOH perhaps offers the opportunity to experiment with a variety of organisational approaches, compatible with the existing system, but transforming it in important ways. Multiple approaches, with some overlap and messiness, may indeed confer some resilience to the response (see above). A key challenge is to work out what options might exist – and to sell these to governing bodies and senior management.

b) Incentives for organisational change

Large organisations find it difficult to change, particularly if a 'new' idea such as OWOH is seen as a threat to power, influence and budgets. But how can recalcitrant organisations be encouraged to do so? There are sticks and carrots available to the international community, and while 'conditionality' has got a bad name, it may provide an incentive to change in the face of intransigence, foot-dragging and obfuscation. For OWOH to have chance of success, change will have to happen, even if it is incremental and non-radical, and this needs to be designed and facilitated. Internal institutional mechanisms – including both incentives and sanctions – will have to be implemented to encourage collaboration, joint working, innovation and coordination; all central to the OWOH approach. Can a OWOH approach work its way into professional incentives and career progression pathways, for instance? Can technical agencies be encouraged to change hiring policies and expand the range of professional expertise required? Can institutions gain a OWOH 'kite-mark' or other certified recognition for consistently implementing certain policy changes – say in relation to the generic principles outlined above? Can funding be tied to particular changes, with diverse stakeholders holding organisations to account? These are all ifs, but none are impossible if the will and commitment is present.

c) Donor coordination and aid effectiveness

Despite the Paris Declaration, the One-UN initiative and multi-donor platforms and funding mechanisms the experience of the HPAI response in aid dependent countries has been abysmal. Donor aid has created major distortions, multiple confusions and has fuelled patronage networks. This has often made matters worse, undermining the capacities of states and state agencies to respond. While there are good arguments for an international response on the basis of a 'global public goods' argument, this should not incapacitate or divert local response systems and views. While it is of course not just donors and the international agencies who are at fault, in many instances local actors have exacerbated the problem by inviting numerous aid investments with minimal quality control, seeking in turn to extract rent and foster patronage networks.

d) Beyond assumptions of rational, technical approaches

Many technical interventions at the centre of international disease responses assume a rational, functioning bureaucratic system, where policies get implemented in a linear and unproblematic fashion. Weberian assumptions rule, and patronage and politics is seen as something unseemly, not to be mentioned or addressed. But of course the reality in many parts of the world, as the case studies from SE Asia starkly showed, is that the 'politics of the belly' dominates. This is the way things work – and sometimes they do, rather well. Sometimes of course corruption and patronage distorts efforts with negative consequences, as appropriate drugs or vaccines never find their way to the right places, or aid funds get diverted to other uses. But the ground reality of patronage politics and non-Weberian bureaucracies must be taken into account in thinking about interventions in contexts. If a disease response and control system is to work it must take into account such politics; otherwise – as so often in the past – it will fail.

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Appendix 1: Participants list

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Appendix 2: Workshop papers and sources

All available from the project website at:

www.steps-centre.org/ourresearch/avianflu.html

Scoones, I. and Foster, P. (2008) *The International Response to Highly Pathogenic Avian Influenza: Science, Policy and Politics*, STEPS Working Paper 10, Brighton: STEPS Centre

Ear, S. (2009) *Cambodia's Victim Zero: Global and National Responses to Highly Pathogenic Avian Influenza*, STEPS Working Paper 16, Brighton: STEPS Centre

Forster, P. (2009) *The Political Economy of Avian Influenza in Indonesia*, STEPS Working Paper 17, Brighton: STEPS Centre

Safman, R. (2009) *The Political Economy of Avian Influenza in Thailand*, STEPS Working Paper 18, Brighton: STEPS Centre

Vu, T. (2009) *The Political Economy of Avian Influenza Response and Control in Vietnam*, STEPS Working Paper 19, Brighton: STEPS Centre

Appendix 3: Comparative table

	Cambodia	Vietnam	Indonesia	Thailand
<i>Humans and livestock</i>	14m people, 16m poultry, 90% backyard	84m people, 245m poultry; backyard 65%	225m people; 600m poultry; c. 40% backyard	62m people, 20% backyard
<i>Economy and aid</i>	Aid 11% of GDP; tourism critical; no poultry exports	Aid 7% of investment; rapid economic growth; negligible poultry exports	Agriculture 14% of GDP; aid 1% of GNI; limited export but local industrial interests in poultry sector	Agriculture 10% of GDP; aid minimal
<i>Risks and perceptions</i>	Droughts, floods seen as important. Major coverage of HPAI in media	Selective media coverage; little debate	Earthquakes, tsunamis, ferry disasters....HPAI widely reported in media	SARS, tsunami; Major media coverage of HPAI
<i>Politics, governance and political culture</i>	Strong patronage politics	Party dominance, patronage politics	Decentralised, chaotic, patronage politics	Top down, centralised; extra-governmental, commercial interests
<i>HPAI human deaths</i>	7	52	113	17
<i>HPAI response</i>	Public awareness, village animal health workers	Vaccination; culling and compensation	Selective culling, intensive monitoring and surveillance (PDS); some local drug/vaccine mfg capacity	Ring culls and compensation; public information campaigns; expansion of lab capacity; significant vaccine and drug mfg capacity