Social impacts of structural change in the poultry sector

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SUMMARY
This paper attempts to highlight the social impacts that could be important as the poultry sector changes shape, although there is limited published evidence on which to draw. The paper begins by outlining some of the features of structural change, which are described in more detail in other papers presented at this conference. It then takes three areas of social impact and examines them briefly in relation to structural adjustments: culture change, as exemplified by changes in consumption and marketing of poultry products; livelihoods impacts, under each of the five “capitals” of the livelihoods framework; and gender effects. It concludes by drawing some lessons for policy-makers and development agencies.

Key words: adjustments, change, poultry

1 INTRODUCTION
Papers presented earlier in this conference and the working papers prepared as background indicate that the poultry sector is already changing shape and is likely to continue to do so. Changes in structure of the sector can be expected to have impacts on social factors: the food that people consume, their social networks, the way in which they make their living, and gender dynamics within households and in society.

There is limited published evidence on which to draw, and the data available from recent studies are seldom disaggregated by social criteria; nevertheless there are clear indications of the relationship between the organization of the sector and the lives of people that make a living from it or use its products. The paper begins by revisiting the features of structural change in the poultry sector, something that is described in more detail in other papers presented at this conference. It then briefly examines three areas of social impact: culture change, exemplified by changes in consumption and marketing patterns; livelihoods impacts, under each of the five “capitals” of the livelihoods framework; and gender effects. It concludes by drawing some lessons for policy-makers and development agencies.

2 STRUCTURAL CHANGE
Extrapolating from the pattern in China, India, Brazil, the United States of America and Thailand, structural change implies:

- functional concentration – fewer production units but larger ones, fewer live-bird markets and traders on bicycles, small slaughter points replaced by larger slaughterhouses, and more large retail outlets;
geographic concentration or relocation of feed production, markets, poultry production and processing facilities; and

integration of market chains, with control in the hands of large companies which may contract farmers to carry out operations on their own farms, or employ managers and workers in company enterprises.

Any combination of these trends will have an effect on the actors who participate in the poultry sector and on the roles that they play. The number of people making a living in the sector may remain the same, although this depends on the employment structure within a market chain – in a vertically integrated and concentrated chain there are likely to be fewer people involved in primary production and transport, but more employed in processing and retailing. However, unless cooperative models of ownership can be made to operate successfully, there will be a shift from single or family ownership of premises and enterprises towards employment in large companies.

Notwithstanding this trend is the fact that large numbers of people keep small flocks, with those scavenging in the backyard representing a safety net that requires very little investment. Table 1 shows figures for Southeast Asian countries. In Africa smallholder production is estimated to range from 16 percent (Nigeria) to over 90 percent (United Republic of Tanzania).

Small-scale commercial poultry development has been promoted by development agencies and practitioners as a route out of poverty. The model for smallholder poultry development pioneered by the NGO BRAC in Bangladesh and adapted for use in Afghanistan, India, Sri Lanka, Sudan, Uganda, and the United Republic of Tanzania, is one example that has provided many people with a route out of poverty (Dolberg in FAO, 2007a). It divides the production cycle into distinct activities with different people involved in (and specialist in) each. Will this model and others like it be competitive if there is an accelerating trend towards concentration and relocation? What are the implications for people who have invested large proportions of their income in poultry enterprises?

### Table 1
Ownership of backyard and small commercial poultry flocks: Southeast Asia

<table>
<thead>
<tr>
<th></th>
<th>Small commercial</th>
<th>Backyard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambodia</td>
<td>&lt; 1% of poultry</td>
<td>99.9% of farms, 90% of poultry</td>
</tr>
<tr>
<td>Indonesia</td>
<td>11.80% of poultry</td>
<td>63.4% of poultry</td>
</tr>
<tr>
<td>Lao People’s Democratic Republic</td>
<td>10% of poultry</td>
<td>90% of poultry</td>
</tr>
<tr>
<td>Thailand</td>
<td>10% of production, 98% of producers</td>
<td></td>
</tr>
<tr>
<td>Viet Nam</td>
<td>10–15% of production, few producers</td>
<td>65% of production, possibly 70% of poultry</td>
</tr>
</tbody>
</table>

*Source: Adapted from Rushton et al. (in FAO, 2005).*
3 CULTURE CHANGE

If culture is defined as the attitudes and behaviour of people or “the way we do things”, then changes to the shape of the poultry sector both affect and are affected by culture. We will use food-consumption patterns to illustrate the point. On a recent visit to Hunan Province China, it was striking to find two very different cultures of marketing and consumption existing, for the time being, side by side (Figure 1).

A “wet” market had many kinds of eggs on display – from fresh to preserved, accessible to people to pick their own. Live poultry were kept in cages where the buyer could select a duck or chicken, which was promptly killed and defeathered. There was also “warm” meat on sale, nothing chilled or preserved. A large global supermarket chain, which had an outlet in the city not many kilometres away also sold many kinds of eggs, but all packed and sealed in plastic. Figure 1 shows preserved egg yolks, hygienically sealed and easy to prepare, and a rotisserie where the consumer can buy a freshly roasted bird and take it home to heat up and eat. There were also many kinds of chilled, frozen and dried poultry meat.

Economic growth and urbanization in eastern China are both affecting culture: the demand for products from supermarkets grows as more people move to cities and become richer, and women in particular have more money and less time to spend on food preparation. Economic policy is accelerating cultural change as it is easier now than formerly

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**FIGURE 1**

*Traditional*” and “urbanized” marketing of poultry products, Hunan Province 2007

Traditional: a wet market

Urbanized: a supermarket
for global businesses with very large retail outlets to invest in China. These cultural and economic changes are driving a change in the structure of the sector, as large retail outlets demand reliable supplies of safe products, which are easier to obtain from larger producers. At the same time, there remains a large demand for fresh products from local markets, perhaps from less wealthy or more traditional consumers, perhaps from people who prefer to trust their judgment and buy meat from birds that they have seen alive.

If China follows a similar pattern to that of the industrialized countries, consumption patterns will split between a large demand for cheap and convenient food, and a continuing but much smaller demand for specialized (and expensive) foods including those that are very fresh and from known sources. Large retail outlets already sell such a range of products, and the products on sale vary from province to province to suit local tastes. Some people will choose to use the large outlets and diversify their food consumption – others may be forced to change their consumption habits for economic reasons.

4 LIVELIHOODS

The sustainable livelihoods framework identifies five types of “capital” that are necessary to people. Poultry contribute in some degree to all of them (FAO, 2007b).

4.1 Human capital

Human capital directly builds up the health and capability of people, particularly nutrition and education. Poultry in small flocks contribute directly and indirectly to household nutrition. A survey in rural Turkey found that poultry meat and eggs contributed on average 40 percent (minimum 25 percent, maximum 60 percent) to total protein intake (Geerlings, in FAO, 2006). In Egypt, income losses after outbreaks of highly pathogenic avian influenza (HPAI) forced households to cut down on household expenses and change their diet in favour of cheaper food items (Geerlings et al., 2007). Structural change that leaves very small flocks and small rural markets untouched will allow poultry to continue to contribute to household nutrition.

4.2 Social capital

Poultry contribute to social obligations and religious ceremonies, and in some cases they need to be specialized birds of local breeds. In Egypt and Turkey, for example, it is traditional to provide poultry meat and eggs to visitors, and when these are not available social occasions are fewer. Women who own and sell birds have opportunities to network and may have increased social standing. Income from sales of poultry products provides women with money for their daughters’ trousseaus or to buy cell phones. In the United States of America and the United Kingdom, the sale of turkeys for roasting soars at Thanksgiving and Christmas.

Fighting cocks form a specialized, although usually illegal, part of the social fabric. They have a very high value to their owners, some of whom are extremely wealthy, and are associated with gambling and other risky activities.

Traders of poultry and eggs have a social as well as an economic place in society. Small traders on bicycles travelling in a radius of 20 or 30 km from their home base carry information between villages, and this adds to their social standing.
Structural change could pose a large threat to the social capital of small-scale urban poultry keepers, such as those in Egypt with very small rooftop flocks, who may lose a source of social capital without being able to find an obvious substitute. Small traders in peri-urban and urban areas may find their supply chains disrupted or relocated beyond their reach.

4.3 Natural capital
Herded duck flocks have a special place in the ecology of paddy rice systems, where they scavenge for crop residues, insects and snails, and deposit manure; their presence has been found to increase the root growth of rice. In Turkey, rural women list insect control as one of the reasons that they like to keep chickens (Geerlings, in FAO, 2006). Mixed enterprises where ducks or geese share the same pond as fish and provide manure for nutrition are also a profitable and ecologically sound part of mixed farms in wetter areas of Asia.

Natural capital may be most affected by structural change if this involves banning extensive duck production – a possibility in Southeast Asia where there are concerns about persistence of HPAI virus in extensive ducks systems in wetland areas.

4.4 Financial capital
In many countries, poultry owned by poor families provide income for their owners. In Egypt, poultry can contribute 44 percent of income, or up to 90 percent at certain times for very poor households (Geerlings et al., 2007). This is an unusually high figure; by contrast, in Viet Nam’s “delta” areas in the north and south of the country, very small poultry flocks owned by poor families contribute approximately 5 percent of the income of their owners (ACI, 2006b). Small poultry flocks are a convenient part of the livelihoods portfolio because they need little investment and can be managed from home with family labour.

Small commercial flocks have been an accessible first step out of poverty for many
farmers in Asia and Africa, but are particularly vulnerable to structural change. In India, the Kuroiler value chain (described by Ahuja and Sen in FAO, 2008) appears to be flourishing as an intermediate step in structural change. It is longer and more formal than the value chains usually associated with village flocks, but less concentrated than commercial broiler chains. The Kuroiler is a five-way cross that has the hardiness of a traditional bird but grows larger and faster. Eggs are supplied from the parent company to hatcheries, which produce day-old chicks for sale to “mother units” kept by village entrepreneurs. They raise the birds to two or three weeks old in netted houses, vaccinate them and sell them to pheriwallahs (small traders) or directly to owners of scavenging flocks in the same village.

An evaluation of the impact of the value chain is currently under way; initial impressions suggest that it provides a livelihood to large numbers of people, the level of investment and profit increasing with concentration up the chain. Those owning scavenging flocks have made some changes to their previous practice, as they now have to buy young birds instead of rearing them, but otherwise keep the birds and market them in much the same way as the traditional “desi” breed, which still makes up part of the village flock. Pheriwallahs retain their old modes of transport and range of travel, but spend a large proportion of their time trading in Kuroilers. The mother units are an introduction to the system for those who have more to invest and prefer a village-based enterprise to employment or a business in town.

By contrast, Viet Nam had a dynamic small commercial poultry sector with farmers in villages rearing flocks of up to a few hundred “white feather” birds from day-old chicks supplied by large breeding companies, who also provide feed and advice. During the HPAI outbreaks and subsequent adjustments to the sector in Viet Nam in 2005–2006, these farmers were badly hit and slower to recover than larger enterprises. Some have recovered and are flourishing while others have permanently lost a large part of their market share (ACI, 2006a and b).

Structural change has the potential to reduce financial capital for some while increasing opportunities for others. Entrepreneurial small-scale producers, who are able to upgrade to meet the needs of concentrated market chains, may convert to contract production, borrow money to invest in more biosecure premises or form cooperatives. Some people who have never worked in primary poultry production may find employment in processing or retailing. Producers and market operators who are less agile, more vulnerable, or located in places where regulations are more strictly applied (e.g. within or close to cities) will find their livelihoods reduced and will need to seek alternatives. If structural change is guided by risk assessment and adapted to local needs, rural backyard flocks need hardly be affected.

### 4.5 Physical capital

Small-scale commercial flocks require investment in physical capital: fences, poultry houses, netting to exclude wild birds, feed storage. Many owners of small commercial flocks borrow money, often at high rates, to make their initial investments. To a certain extent this is a sunk cost, as not all of it can easily be converted to other uses if the owner changes from poultry to another enterprise.
4.6 Gender
Gender includes dimensions of women’s welfare, children’s welfare and household dynamics, in all of which poultry play a part. Backyard poultry are mostly owned and managed by women. Small-scale commercial poultry are often owned and sometimes traded by women. In many West African rural communities, children have care of poultry. This is a means by which they make a contribution to the family and also gain experience of taking responsibility and sometimes earning income. Poultry houses are constructed with very small entrance-ways, through which only children can pass, and this reduces the chance of theft by adults.

Source: Geerlings et al. (2007)
Structural change may bring up problems if it requires family members to change from ownership of a flock to employment in a business outside the home, means that people must own land or have access to capital in order to participate in changes, or requires an enterprise to be moved to a different location.

A small flock kept near the house, whether scavenging or enclosed, is a family-friendly and fairly time-flexible enterprise that allows some members of the family to earn an income from the home and to adjust their schedule around other activities. Employment in other parts of the poultry market chain, while it may be equally profitable, requires adjustment of family roles and timetable. Home-based enterprises in non-poultry activities are easy to find in some places and less available or acceptable in others.

In some countries, women do not have title to land, and this means that restructuring that requires relocation of production premises will exclude them. If they do not have title to assets, they may also be unable to borrow money to invest in larger and more biosecure premises or transport facilities, or to become part of a cooperative scheme.

5 CONCLUSIONS FOR POLICY-MAKERS AND DEVELOPMENT AGENCIES

Structural change in the poultry sector faces us with three separate social challenges: those related to very small flocks/backyard systems; those related to herded ducks; and those related to small commercial operations.

Very small flocks in cities are, perhaps inevitably, under pressure from biosecurity regulations and restructuring proposals. However, this question needs to be revisited; while birds scavenging in city streets are a human and animal health risk, those confined on rooftops need not necessarily be, and they play an important part in the lives of their owners. In rural areas, there are no compelling reasons to put backyard flocks under pressure. In places where very small poultry flocks are restricted, poor women and their families will suffer and people will keep poultry illegally – there is already evidence to demonstrate this from studies in progress. In places where backyard poultry are permitted, culturally appropriate and inexpensive biosecurity measures appropriate to the sometimes small risks posed by these systems need to be developed with local people and promoted on farms and in local markets.

Herded duck keeping is a unique system that fits the ecology and social fabric of wetland areas where paddy rice is grown, and satisfies a large demand for duck meat and eggs. However, areas with double-crop paddy rice and herded ducks coincide with areas that have had high levels of HPAI outbreaks. As the systems cannot be made biosecure by any of the methods used for enclosed birds, there is some doubt as to their long-term future. An interim solution is to vaccinate the birds and use very careful surveillance to detect the occurrence of disease. If such systems are banned, their owners have the choice to:

- enclose them, requiring investment and with possible consequences for rice production; or
- stop keeping them, with a consequent loss of livelihood and the need to change rice pest control and nutrition practices.

Where poultry keeping and sale become more tightly regulated small-scale commercial operators face a challenge. What choices do they have? They can:

- upgrade and/or upscale their enterprises;
• find niche markets and produce or market specialized products;
• find different ways to do business (e.g. contract farming, partnerships, cooperatives);
or
• find a livelihood away from primary poultry production or trading.
All of the above require some assistance in the form of knowledge transfer or investment support if development is to be equitable.

An overall conclusion is that strategies for developing the poultry sector and adjusting its structure for safer production need to be based on a deep understanding of the sector and framing negotiations for change to take account of social as well as economic realities. This could involve activities such as:
• mapping not only product flows but human behaviour in poultry market chains, to learn about the most effective entry points for change, and about the people who will have least voice and be most at risk;
• anticipating cultural and financial barriers to change;
• giving due warning of changes so that the most vulnerable people have time to adapt; and
• knowing the full value of poultry to owners and traders so that alternative employment can provide comparable benefits.

Social change is part of life and all progress brings about social impacts. Changes to the poultry sector in developing countries will change the social fabric and the livelihoods portfolio of many vulnerable people, and so they need to be carefully considered and backed up by supporting measures where existing coping strategies will not be enough. As poultry are to a great extent private sector business, providing appropriate support will be a challenge for governments and development agencies.

REFERENCES
