

Poultry in Bangladesh : Awaiting the Awakening

SYED S. KAISER KABIR

Vice-President, WPSA-BB

Introduction

The poultry industry in Bangladesh is a fitting example of how private initiative flourishes in an enabling environment fostered by government vision and policy. Since the mid-70s, public policy has been genuinely committed towards the development of a thriving poultry sector. A variety of fiscal, monetary, and trade incentives in addition to moral support have been on offer to investors.

To their credit, the response of the private sector to a far-sighted policy regime has been effective and comprehensive. There are three points to note in this respect:

1. Investments have been made across a broad cross-section of socio-economic classes. Literally, tens of thousands of people have pledged risk-capital to this industry.

2. At some segments of industry, most notably, breeding, the quality of investment in terms of technology has been world-class.

3. Although the industry is relatively new, the formation of backward and forward linkages are already in evidence.

The objective of this paper is three-fold: First, to demonstrate that the poultry industry can have a significant impact on the overall economic development of Bangladesh. Second, export of poultry products are a very real possibility and will bring huge gains for the country. Third, public policy should retain the positive and supportive focus that it has maintained over the last three decades --- essentially the poultry industry is one of those examples where government has got it right.

Characteristics of a Poultry Industry

To understand the poultry business whether from the perspective of an entrepreneur or policy maker it is necessary to acquaint oneself with the following salient features of a typical poultry industry:

(1) *Meat Producers and Egg Producers:* There are essentially two types of birds in the industry viz., Broilers that produce meat; and Layers that produce eggs. Genetically there are important differences between these two types. Moreover, broilers and layers are reared separately.

(2) *Intergenerational Separation:* In the quest for higher productivity, there is a considerable use of genetic engineering in this field. As a corollary, breeding rights are regulated --- in particular intergenerational breeding is strictly avoided. Thus, the poultry meat and eggs that are ultimately consumed by us comes from a chain of distinct production stages. These are shown in the Table No. 1:

Table 1. Intergenerational Production Stages

Type of Farm	Output
Pure Lines	Day Old Great Grand Parent Chicks
Great Grand-Parents	Day Old Grand Parent Chicks
Grand Parents	Day Old Parent Chicks
Parents	Day Old Commercial Chicks
Commercial Birds	Meat or Eggs.

(3) *Perishable Output in Most Segments (Zero Inventories):* From the above table, note that at the first four stages of production the output is a Day-Old-Chick (DOC). Since these chicks must be sold within 24-hours, there is virtually no concept of finished goods inventory in a large segment of the industry.

(4) *Long Lead Times in Production:* It takes nearly 30-weeks before the first chick is hatched. Hence, farms must carry and finance large amounts of raw material stock.

Author's E-mail Address: sskkabir@renata-ltd.com

(5) *Demand, Supply Mismatch, and Price Volatility*: There is almost always a mismatch between demand and supply in this industry. Breeder stock placements are made 30-weeks ahead of actual production on the basis of expected market demand in the future. Understandably, these predictions are not fully accurate. Moreover, because of the Zero-Inventory feature, there is no way to smooth out the output in response to current market demand. Hence, there is almost always excess demand or excess supply, and the price gyrates up or down to clear the market.¹

(6) *Vertical Integration*: A Mature and fully developed poultry industry tends to be characterised by high volumes and low margins.² In order to compensate for the low margins at each stage of production there is a great deal of vertical integration in the industry. The most common structure being Parent Farm + Commercial Farm. However, integrators typically also own a feed mill. So, in effect the most common form of integration is Feed Mill + Parent Farm + Commercial Farm. The integration takes the form of either direct ownership or a system of contracts linking the various stages of production. As profit margins invariably contract when the industry develops, it is almost impossible to survive in the poultry industry without some degree of vertical integration.

Structure of the Poultry Industry in Bangladesh

A private sector company named Eggs and Hens pioneered modern poultry farming in Bangladesh. The company began its operations as early as 1954 in erstwhile East Pakistan. After Independence through government initiative a medium-sized breeder operation was set up under the aegis of Biman Poultry Complex. Then until the mid-1980s the industry expanded in a slow and restrained manner. However, this subdued period represented the proverbial calm before the storm. From the early 1990s, a large number of private sector companies and NGOs began investing heavily in this sector. The scale and quality of the investments completely revolutionised prevailing ideas of poultry farming.

It is difficult to obtain precise figures for investments because a significant portion of these have been carried out by unregistered enterprises without recourse to bank finances. Moreover, there has not been a truly rigorous study to estimate employment. The estimates that are usually bandied about represent at best casual empiricism. These figures provide an idea about the size of the industry, but the scientific sanctity of such cannot be guaranteed. With these caveats in mind, from various sources³ one may estimate that capital investment is between US \$1-\$5 billion, and employment of 3-5 million. The breeder operations are characterised by medium to large investments made by approximately 130 companies. Finally, there are about 100,000 small-medium sized commercial farms owned by as nearly as many individuals.

In essence, these "guesstimates" convey the idea that the poultry industry has grown to a respectable size, and that it affects the livelihoods of millions of people in Bangladesh. The structure of the poultry industry in Bangladesh is shown in Table No. 2.

Broiler grandparent farming is a new phenomenon in Bangladesh. Presently, there are four companies in this business. The bulk of broiler parent stock and all of layer parent stock is imported. The growth rate is quite robust across broiler and layer segments. Using Table No. 2, it is possible to derive total sales of the industry. This exercise is done in Table No. 3.

Adoption of Modern Technology

There has been widespread adoption of modern technology in the breeding sector. Environment controlled housing, automated feeding and drinking systems, computer controlled incubators, and sophisticated diagnostics such as ELISA, etc., are now quite common. At the time of writing this report, WPSA BB estimates that 100% of Grandparent stock and 60% of Parent Stock are being raised in environment-controlled housing.

¹ In mature poultry markets this problem is somewhat alleviated by freezing meat products and egg processing. The use of such technologies in effect allow the creation of inventories at the downstream end of the industry, thereby potentially allowing excess demand or supply at the other end to be managed without wild fluctuations in prices.

² In the early stages of development the margins can however be quite high.

³ These sources are as follows: Rahman, Mousumi: "*Bikashoman Poultry Shilper Jonnye Proyojon Shorkari Prishthopotokota*." Poultry Khamar Bichitra, Year Book, 2002. PP 25-26. Interviews with Executive Committee members of the Bangladesh Poultry Breeders Association (Proposed) on 22/02/05.

Table 2. Structure of Poultry Industry in Bangladesh

Figures in 000's

BROILERS	2004	2003	2002	2001	2000	CAGR*
No. of Grand Parents (Yearly)	25	5				400%
No. of Parent DOC Produced (Yearly)	350					
No. of Parent Stock Imported (Yearly)	2500	1800	1300	1050	750	29%
No. of Commercial DOC (Weekly)	5000	4000	3000	2423	2000	23%
Broiler Meat Prod. In Kg (Weekly)	6175	4940	3705	2992	2470	23%
LAYERS						
No. of Parent Stock Imported (Yearly)	280	320	300	220	145	17%
No. of Commercial DOC (Weekly)	476	560	510	381	226	19%
No. of Commercial Eggs (Weekly)	99000	110800	91800	65968	62807	14%

* Compound Annual Growth Rate: Estimates a compound growth equation of the form $P_t = P_o(1+g)^t$

Source: "The Structure of Poultry Industry in Bangladesh." A report compiled by Renata Agro Industries Limited. February 16, 2005 (Mimeo)

Table 3. Total Sales

(In Million US \$)	
	2004
Broiler Meat	\$ 368
Eggs	\$ 253
Total Sales	\$ 622

NB: Assumptions: Retail price of broiler meat per Kg = Taka 70
 Retail price per Egg = Taka 3
 Exchange Rate : Taka 61 per US \$

Most commercial farms are quite small and their owners do not have the requisite funds to embrace modern technology. However, of late a few large breeder farms are working closely with small commercial farmers through a system of contracts. Alliances of this nature are helping small farmers adopt modern methods of management. Although such alliances are few and far between, it represents the early days of vertical integration in the industry.

Alongside the implementation of modern technology, there has been a commensurate rise in the demand for skilled personnel. There is presently a great deal of interest in recruiting veterinarian and animal husbandry graduates. In addition, the poultry industry has actively sought foreign expertise whenever necessary.

Competition

Competition was understandably weak in the early 1990s when the number of participants in the industry was few. In addition, prohibition on importing commercial day-old-chicks, meat, and eggs helped keep prices high in the domestic market. Those were the days of low volumes and high margins --- a complete contrast to the normal phenomenon in developed markets.

Although the import regime remains unchanged, new entry into the industry has increased the severity of competition manifold. We now see the typical effects of competition, viz. falling prices, greater productivity, higher product quality, better services, and so on. To take but one example, over the last three years broiler day old chick prices have fallen from Taka 24 to as low as Taka 5.

Distribution: Middle-men represent the main link between farms and retailers. As most retailing units in Bangladesh deal with very small quantities of poultry products it is not really cost-effective for a single poultry farm to access the retailers directly. In this regard, the middle-men and retailers provide a valuable service to the industry. However, because the farms do not contact the final customer directly, there tends to be a good deal of mismatch between ex-farm and retail prices. In our experience, ex-farm prices show high variability, whereas the retail prices for broiler meat and eggs are quite rigid. In other words, a decrease in ex-farm prices does not necessarily translate into lower prices for final customers, and *vice versa*.

This insularity between ex-farm and retail prices is likely to dissipate in the long-run. As the demand for poultry products grow, it will become feasible for a single company to contact the retailers directly or have its own retail units, thereby getting closer to the final customer.

Degree of Vertical Integration

Throughout the 1990s profit margins were high in all segments of the industry, and there was little need to vertically integrate. Instead, the investors ploughed back most of their profits into investments within their own industry segment. However, the demand for poultry products, although fast increasing, did not grow at the same rate as supply. As a result, industry profitability declined quite remarkably.

Presently, there is a consensus developing within industry circles that without vertical integration it would be impossible to maintain the momentum of the past ten years. We are already seeing large-scale movements in this direction, as shown in Table No. 4:

Table 4. The Beginnings of Vertical Integration In the Bangladesh Poultry Industry

Vertical Integration	Number of Companies	Name of Farm
Feed Mill+Broiler Grand Parents+Broiler Parents	3	Kazi, Paragon, Kasila
Feed Mill+Broiler Parents+Contract Growing+Processing	2	Aftab, BRAC
Feed Mill+Broiler Parents+Contract Growing	2	Lion Agro, Renata Agro

Source: "The Structure of Poultry Industry in Bangladesh." A report compiled by Renata Agro Industries Limited. February 16, 2005 (Mimeo)

Backward and Forward Linkages

There are several linkages to the main industry that have the potential to create employment and incomes on a substantial scale. Box No. 1 shows the key linkages:

Box No. 1

Key Linkages in Poultry

Feed Ingredients
Finished Feed
Medicines and Vaccines
Poultry Equipments
Diagnostic Laboratories
Packaging
Waste Processing and Disposal
Middle-Men
Retailing

There are no reliable estimates of the number of people indirectly employed. However, given the size and scale of the industry it is reasonable to assume that this number can run into several hundred thousand. Investments in linkage activities are substantial, although exact data are not available. However, using a recent survey⁴, we are in a position to state that there are 64 feed mills in Bangladesh with installed annual capacity (Single shift) of 500,000 MT.

⁴ "The Structure of Poultry Industry in Bangladesh." A report compiled by Renata Agro Industries Limited. February 16, 2005 (Mimeo)

Thus, poultry is already beginning to make an important contribution to the economy. Yet these effects are being felt even though per capita consumption of poultry products compared to many other countries in Asia is still quite low in Bangladesh (See Table No. 5 for meat consumption). As the consumption rises, it is easy to imagine the positive influence throughout the economy.

Table 5. Per Capita Poultry Meat Consumption and GNIA Cross-Country Comparison

Country	Per Capita Consumption of Broiler Meat (Kg) in 2003	Gross National Income Per Capita in 2003 (US \$)
Bangladesh	1.9	\$ 400
Pakistan	3.9	\$ 470
India	1.1	\$ 530
Indonesia	3.8	\$ 810
Philippines	6.8	\$1,080
China	5.4	\$1,100
Thailand	14.0	\$2,190
Malaysia	33.3	\$3,780
Hong Kong	57.5	\$25,430
Japan	13.8	\$34,510

Sources: www.fas.usda.gov

www.foodmarketexchange.com

www.pakissan.com

www.ers.usda.gov

www.thepoultrysite.com

www.rabobank.com

www.gifu-cwc.ac.jp

www.worldbank.org

NB: For Bangladesh the consumption figure refers to broiler meat only.

As per the data in Table No. 5, there is a clear, albeit non-linear relationship between per capita income and poultry product consumption per person. However, it is not always necessary to wait for the economy to grow to provide an impetus to poultry consumption. Especially, given the modest size of our poultry industry it is possible to significantly increase per capita consumption of poultry products without a commensurate rise in National Income. For example, looking at the data, the average Bangladeshi consumes about 1.86 Kg broiler chicken a year. This paltry level of consumption is quite surprising given the low prices of poultry products. Possibly, misconceptions about food safety and palatability contribute to such low consumptions. Yet with comprehensive promotion on a national scale such biases could be overcome. Government endorsement can contribute greatly to the success of such campaigns. To put matters into perspective, if the average Bangladeshi increases broiler meat consumption by one drumstick (150 grams) a month, that is tantamount to a 49% increase in the industry and all its linkages.

Recent Developments in the Poultry Industry

While the long-run outlook is extremely positive, the industry is experiencing a temporary setback. Broiler day old chick prices have collapsed to as low as Taka 5 per unit, which is well below cost. There are two reasons for this predicament: First, the Bird Flu⁵ scare has reduced the demand for poultry meat. Second, as mentioned earlier, demand and supply mismatch is an intrinsic characteristic of the poultry market. Presently, there is a degree of overproduction primarily because of over-optimism among the private companies in the last few years.

Eventually market mechanisms --- albeit very painful, will correct this problem. However, at this stage the Government could consider taking the following measures to mop up the excess supply:

- (i) Buy broiler meat and eggs on a regular basis for public institutions, e.g., penitentiaries, army, etc.
- (ii) Assist the private sector to promote the consumption of broiler meat and eggs through nationwide media campaigns.

⁵ Bangladesh is free from Avian Influenza. However, given that the disease has hit many Asian countries, there is a concern that Bangladesh too could be affected.

The Rise of Export Prospects

One of the most notable developments has been the rise of export competitiveness of the Bangladeshi poultry industry. The Bird Flu phenomenon in several Asian countries has drastically reduced their exports creating a shortfall in the world market. Using various sources⁶ the shortfall between 2003 and 2004 exports of broiler meat for China and Thailand is estimated to be US \$652 million, i.e., nearly twice the current level of broiler sales in Bangladesh. As this country is still free from Avian Influenza it is now in a position to reduce (albeit in a small way) this deficit. In addition, steady increases in productivity and depreciation of the Taka have already increased the export capabilities of the industry. So, we are at the threshold of a making a breakthrough in exports.⁷

Table No. 6 shows the competitive of poultry product prices with respect to India, Pakistan, and Thailand.

Table 6. Cross-Country Comparison of Farm Gate Prices (Pricing as of January 31, 2005) In US Dollars

Minimum prices	Bangladesh	India	Pakistan	Thailand
Each Broiler DOC	\$ 0.1311	\$0.2057	\$0.2189	\$ 0.2323
Broiler Meat (Live weight per Kg)	\$ 0.8197	\$1.0057	\$0.9091	\$ 0.4645
Broiler Feed per Kg	\$ 0.2459	\$0.2610	\$0.2263	\$ 0.1935
Each Female Layer DOC	\$ 0.3607	\$0.3886	\$0.3704	\$ 0.3613
Single Egg	\$ 0.0459	\$0.0329	\$0.0623	\$ 0.0405
Layer Feed per Kg	\$ 0.2131	\$0.2446	\$0.2094	\$ 0.2194
Maximum Prices				
Each Broiler DOC	\$ 0.1639	\$0.2857	\$0.2189	\$ 0.3613
Broiler Meat (Live weight per Kg)	\$ 0.9016	\$1.0514	\$1.1448	\$ 0.8258
Broiler Feed per Kg	\$ 0.2623	\$0.2610	\$0.2263	\$ 0.2194
Each Female Layer DOC	\$ 0.4918	\$0.4114	\$0.3704	\$ 0.5161
Single Egg	\$ 0.0508	\$0.0354	\$0.0640	\$ 0.0632
Layer Feed per Kg	\$ 0.2213	\$0.2446	\$0.2094	\$ 0.2323

Source: ATDP-II Dhaka, 2004. (All figures were reported in respective local currencies. We have converted them into US Dollars for ease of comparison.)

Presently, the broiler industry is more competitive vis-à-vis, international prices than the layer industry. Therefore the immediate attention should be focused on this segment of industry.

In regards to exporting broiler hatching eggs and day-old-chicks (DOCs) it is important to note that because of overproduction the present prices for broiler DOCs are below cost. So, the data in Table No. 6 represents mainly the effects of a glut rather than improvements in productivity. Yet, even if we consider a price such as US \$0.21, which is nearer to production cost, Bangladesh is still in a competitive position to export broiler day-old-chicks or hatching eggs.

There are however two main barriers to export at the moment. These are,

1. Export orders are typically large. It is not possible for most farms to fulfil an order by themselves.
2. Hatching eggs are usually transported by air. The cost therefore becomes quite prohibitive.

⁶ Sources: www.fao.org www.aleb.org www.thepoultrysite.com

⁷ Given the ferocity of export competition only vertically integrated companies stand a chance of winning orders. Alternatively, several companies could consider pooling their resources for exports in order simply to mop up the excess supply that presently characterises the domestic market.

These problems are not insurmountable. For instance, the problem of low volumes per poultry-company could be overcome by pooling the resources of several companies. At the time of writing this report, the industry is already discussing⁸ collaborative ventures to further their export aims. However, in the long-run there is no alternative but to create vertically integrated companies.

The problem of high freight costs cannot be resolved by the private sector alone. It requires Government intervention and possibly patronage. The Government has announced⁹ that agro-processed export items are entitled to a cash incentive of 30%. However, it is unclear whether this directive applies to poultry products as well. A cash incentive of this magnitude would boost exports of meat, and render the export of hatching eggs feasible.

Summary and Concluding Remarks

The impressive growth in the poultry sector owes its origins to commendable initiatives of the private sector that paid due respect to a visionary and supportive public policy regime. Success lies in the same recipe: It is the private sector that must take the lead, and the public policy framework must continue to be supportive.

The Americans have a famous saying, "If it ain't broke; don't fix it." This colloquial saying defines the paradigm for future growth and development. Both the private sector and government have got the recipe right. There is no need for grandiose policies or institutions to oversee the development of the poultry sector.

Of course, the road to success is not easy. There are bound to be setbacks and mini-crises. However, the point remains that the poultry industry is on the right track, and the short-term predicaments that crop up from time to time call for fine-tuning and not changing the direction of the road altogether. In this respect it is very important that the current supportive policies, in particular, the favourable tax-exemption status of poultry be continued for the foreseeable future.

After over a decade of growth, the industry is showing clear signs of oversupply. In a sense, this problem was bound to occur, simply because there has been inadequate attention paid to generating the demand for poultry products. The need of the day, inter alia, is private sector and government collaboration on a nationwide campaign promoting broiler meat and egg consumption. In this regard, the Government could consider instituting and celebrating "Poultry Meat and Egg Consumption Week" every year.

The Government can also help the industry by increasing its purchases of poultry products for supplying to public institutions such as penitentiaries, army, police, etc.

The Bird Flu scare in many countries has provided us the opportunity for exporting of poultry products. For this dream to materialise the poultry farms/companies must redirect their energies towards creating a vertically integrated structure. However, in the meantime, collaborative efforts among stand-alone companies could mimic the effects of vertical integration.

There is scope for the Government to help the industry fulfil the export potential. Presently, exports agro-processed items are entitled to a 30% cash-incentive. As freight costs for poultry products, especially hatching eggs are prohibitive this incentive should be available to our industry as well.

In addition, the fiscal treatment of allied industries that supply inputs for poultry production must be favourable to prevent cost distortions.

Finally, growth requires access to research and skilled personnel. In this regard the contribution of universities and research institutions is paramount. We would therefore request the Government to critically review its budgetary allocations for the specialised learning centres in order to ensure that these are adequately funded to contribute to the task that lies ahead in the poultry industry.

⁸ As reported by executive committee members of the Bangladesh Poultry Breeders Association (Proposed) during an interview on February 22, 2005.

⁹ Bangladesh Bank Circular, July 25 2004. FE Circular No. 05.

There is little doubt about the importance of poultry in the national economy. Yet whatever development we have witnessed is a mere trifle compared to the nest-egg that lies ahead. As long as private sector and government continue to work hand-in-hand the full awakening of the opportunities is inshallah inevitable.

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References

- ATDP-II, 2004.
Bangladesh Bank Circular, July 25 2004. FE Circular No. 05.
Rahman, Mousumi: "*Bikashoman Poultry Shilper Jonnye Proyojon Shorkari Prishthopotokota.*" Poultry Khamar Bichitra, Year Book, 2002. PP 25-26.
Renata Agro Industries Limited: "The Structure of Poultry Industry in Bangladesh:" February 16, 2005 (Mimeo).

Internet Sources

- www.fao.org
www.aleb.org
www.thepoultrysite.com
www.fas.usda.gov
www.rabobank.com
www.pakissan.com
www.gifu-cwc.ac.jp
www.ers.usda.gov
www.worldbank.org