

Final Project 2007- 2009

(Poultry Industry of Pakistan)

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Dedication

We dedicate our project to our parents, teachers and well wishers. Without their patience, understanding, support and most of all love, the completion of this work would not have been possible.

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Introduction

The country's poultry sector did not have a good year with producers – hit by high feed and energy costs as well as a series of avian flu outbreaks through the first half of the year. These hit small-holders particularly hard with some reports saying as many as 35 per cent of poultry farmers were forced out of business in the year. This is likely to have had a large negative impact on rural living standards as poultry is an important source of earnings.

Poultry industry has very strong roots in Pakistan as we just can't see our dinner or lunch without chicken. That's the main reason that the poultry industry flourished in last few decades and today enjoys the status of the second largest industry of Pakistan after textile. Now, the point is that what could be the reasons for one industry to develop at such a faster pace in a region? So, answering the question requires us to look in to the back ground of poultry in Pakistan.

History Of Poultry in Pakistan

In Pakistan the concept of commercial poultry rearing, hatching and feed milling was not known few decades ago. The back yard poultry was the only source of enriched animal protein. In back yard rearing we didn't have the real growing or laying birds. In fact the birds were not kept for any kind of financial gains, rather to rear poultry was like rearing kids. It was the start of 6th decade of the 20th century, when the Government of Pakistan felt the need of intensive Poultry rearing program by keeping in view the increased demand of white meat due to heavy growth in our population. So, it was in 1962 when Commercial Poultry was initially introduced in Pakistan by M/S Shaver's of Canada with the help of PIA and that led to the formation of the PIA Shaver with the poultry sector. In its embryonic stages became a blue eyed to the government officials and the rearing or any kind of business relating poultry was announced to be Tax exempted. The first hatchery was then established in Karachi. Our government supported poultry industry in all aspects that helped the industry to develop rapidly.

As the Poultry was new in the region, the disease problems were obviously expected also, therefore in early 90's Gumboro hits Broiler & Layer flocks and parent stock suffered heavy mortality resulting in great economical losses. After that incidence the efforts were made to get things on track by addressing Vaccination and Bio-Security issues very religiously. The shock was yet fresh in the mind of the farmers and Poultry entrepreneurs when in mid 90's the new disease caught the Parent Flocks in the Northern Areas (Abbotabad and Mansera), where the mortality rate went up to 80% and the industry again suffered grave losses. Again in very next year in 1996 due to increased number of parent stock, the prices of chicken products fell down even below the cost of its production and the farmers again suffered heavy losses. This down fall misery continued till 1997 and ban on marriage food was imposed which reduced the consumption of poultry products by 40%. Late 90's led to the phase of stability in the poultry industry and farmers got good profit margin.

New investors rushed into the poultry farming by adopting the new techniques of environment control houses and industry shifted from traditional conventional open

houses to Semi and completely closed automated houses where the intensive rearing is done under one roof. In this transformation the industry shared huge investments from multinationals and the poultry over all flourished till 2004. In 2004 Avian Influenza hit the South East Asia and Pakistan Poultry Industry suffered heavily due its rumours. Imposition of ban on imports of poultry products by middle east countries made things more miserable. This scary condition of the industry is yet prevailing. We experienced hike in the poultry market for a few months and then a long phase of depression due to selling our products below the cost of production. The Up's and Down's are with every industry but poultry industry of Pakistan witness that quite too often. That's why the industry is so very unpredictable but due to high profits and early returns it is still enjoying its place as 2nd Largest Industry of Pakistan.

Categories of Chicken

The poultry industry is dominated by the chicken companies, some of which are also major players in the turkey markets. Most of these companies are fully or partially integrated; encompassing the breeding, growing, processing, and marketing of chicken and turkey products.

However, some companies specialize. For example, there are companies that deal only with primary breeders, companies that deal in table eggs and layers, and companies whose primary business is selling live broilers.

Primary Breeders

The first step in poultry production is normally the primary breeder company that invests heavily in research and genetic engineering. They spend considerable time and effort in upgrading their selective gene pools in order to provide the major broiler companies with faster growing, more efficient birds. Efficiency is based on the bird's ability to convert feed to weight; its feed conversion ratio.

Primary breeders are the grandparent stock which produce the breeder eggs. These eggs are taken to hatcheries, which are normally company owned, and hatched into

the basic breeder chicks for sale to the producer companies. Many primary breeder companies will only sell hatched chicks rather than eggs for security and quality control reasons. Some of these companies are fully or partially owned by a larger chicken producer.

Breeders

Most of the major chicken producers purchase regular breeder chicks or eggs from the primary breeder companies. Which company they purchase from depends on the size of bird they need as well as any special qualities they are looking for in the finished product. It is not unusual for producers to purchase one strain of hens to be bred with a different strain of rooster in order to produce a particular type of broiler chick. Some producers also maintain a few primary breeder flocks as well as purchasing outside breeder chicks.

Breeder chicks are placed in pullet houses and raised until approximately 20 weeks of age. At that time they are placed in wooden cages which are stacked on semi-trailers, and moved to breeder houses where they will remain during the 40 week laying cycle. Within 4 weeks of being placed in the breeder houses, the hens will begin producing enough eggs to make it profitable for the company to haul the eggs to their hatcheries. This is typically 50 percent production or one egg every other day. From age 0 to 24 weeks, birds are considered pullets. From 24 weeks on they are full-fledged breeder hens.

The typical breeder house is 400 feet by 40 feet and houses 6,800 or more hens and 700 or more roosters. Raised slats line each side of the house with a floor-level walkway running through the middle. The birds are fed once each day early in the morning. Eggs are normally gathered three times a day and stored in a cooled egg room to prevent incubation.

At the end of each laying cycle the breeder house is cleaned out, sprayed, and new sawdust is spread in preparation for the next flock. The old litter can be used or sold by the grower as fertilizer. Primary breeders and breeders weigh from 7 to 9 lbs. at maturity. Their meat is not as tender as the broilers and it is typically used in soups or similar products.

Broilers

Broilers are the main meat producing bird for the poultry industry. Broiler eggs are picked up from the breeder houses twice a week, and delivered to the hatcheries. The incubation period typically runs 21 days. The resulting broiler chicks are placed in grow-out facilities, where they are fed, watered, and medicated under strict company guidelines intended to maximize their weight to feed ratio.

There are three basic types of flocks for broiler purposes. Mixed flocks are the typical broiler flock containing males and females. These flocks are normally grown to approximately 3.8 lbs. through 4.4 lbs. An all-female flock is raised when smaller weight is desirable since the females tend to out perform the males in the earlier stages. Typically, an all female flock is raised to be sold as Cornish hens with weights up to 2.2 lbs. Flocks containing all males are used when larger birds, normally over 4.8 lbs., are needed due to their ability to outperform the females in obtaining the larger weight.

Layers

These are very specialized birds that have been bred to be finely honed egg producing animals and are very different from the breeder lines. They produce the table eggs sold in stores. Current layers weigh approximately 3 pounds and would fit in the palm of your hand. The lack of extra weight keeps feed from being diverted to muscle upkeep and away from egg laying. This efficiency results in approximately 280 eggs per bird each year. Unlike breeders, it has been profitable for companies to hold the layer flocks through at least one molt period and a second laying cycle.

Like their breeder counterparts, chicks (pullets) are placed in pullet houses until they are approximately 21 weeks of age at which time they are moved to layer houses. These houses are vastly different from, and much more expensive than, breeder houses. The hens are housed in stacked cages with 2 to 10 hens per cage. The houses are fully automated to provide a constant supply of feed and water to each cage and to maintain environmental control. Eggs are collected by conveyor belts that run from the cages to the egg room where they are sorted and packaged.

Turkeys

There are several differences between the chicken and turkey industries that should be noted. One main difference is the turkey industries' use of artificial insemination. Unlike breeder chicken flocks where hens and roosters are housed together, breeder turkey hens are housed separate from breeder turkey toms and all fertilization takes place artificially. Breeder hens reach a marketable production stage at 30 to 32 weeks, lay for an average of 24 weeks, and produce an average of 70 eggs per hen. At the end of their laying cycle these birds can be processed as regular meat turkeys. This is very different from the chicken breeders that have a lower meat value at the end of their cycle than the broilers.

Meat turkeys are raised for 14 to 17 weeks with tom turkeys being raised longer than hens. The toms gain weight much faster than hens, and have a higher conversion of feed to meat ratio. Given this difference tom eggs have a higher market value than the hen eggs. Overall, turkey eggs are relatively expensive due, in part, to the low number of eggs produced by each hen during the laying cycle.

Most turkey farms maintain three separate grow-out houses that are connected by enclosed walkways. Each house is progressively larger to accommodate the turkeys as they progress from a chick to a mature size. Thus each unit of three houses contains three flocks at staggered levels of growth.

Development of Poultry Industry in Pakistan

Special emphasis was laid by the Government on development of poultry industry in the country during 1965-75. The Government made major policy decisions to provide all possible facilities to poultry industry in the annual development plans. The incentives provided to poultry farmers/poultry industry included.

1. Tax exemption on income derived from poultry farming.
2. Import of flock and incubators was permitted under free list.
3. Allotment of state land on lease for poultry farming at very nominal rates.
4. Established poultry research institutes at Karachi and Rawalpindi through Food and Agricultural Organization (FAO) of the United Nations to facilitate research services specifically concerning disease control programmes.
5. Two meatless days were announced to encourage poultry meat consumption.
6. Subsidy on grains to form low cost quality ration, through UNDP-grains.
7. Loan through ADBP for the construction, of poultry sheds.
8. Established directorates of Poultry Production in Karachi and Punjab to provide extension services to the poultry farmers.
9. Establishment of Federal Poultry Board to coordinate government and industry activities in the poultry business.

Phases of development of Pakistan's Poultry Industry

Phase 1:

The Introductory Period 1965-1970.

During this period the early poultry ventures, involving risks were supported by Government policies that exempted poultry production from national tax levies and permitted producers to import genetically improved breeding stocks and equipment such as incubators. A number of catalytic forces shaped the early development of the poultry industry.

These forces included potential profits in the industry, availability of technologies and supportive government policies resulting from the perception of a protein deficiency in Pakistani diet. The government of Pakistan also established the Directorate of Poultry Production at Karachi, which provided extension services to the growing numbers of poultry farmers. The early development of the industry was also characterized by emerging problems including rising feed costs, disease outbreaks and consumer preferences for Desi birds.

Phase 2:

Institutional Development 1971-1975.

As poultry production became a significant enterprise in the agricultural economy of Pakistan, the government strengthened institutions serving the new industry. The Federal Poultry Board was established to coordinate government and industry activities, in the layer and broiler business. Research services were offered through the Poultry Research Institute with the assistance of UNDP/FAO funds. The Directorate of Poultry Development was established in Punjab similar to that in Karachi. Poultry Producers struggled with the adverse effects of government programmes e.g. the ban on export of poultry products and the consequences of some major planning flaws such the establishment of poultry estates clustered together without adequate sanitation and health control. This phase is characterized by both the greatest success of the poultry industry

and its greatest failure. A dramatic increase in poultry production resulted due to diverted investments from the nationalization of industries in other sectors. At the same time the clustering of production units led to large disease outbreaks and the lack of marketing facilities due to ban on export of poultry products limited industry growth.

Phase 3:

The Production Boom 1976-1980.

The government of Sindh followed a policy to attract investment in poultry farming by offering estate land under ten year leases. At the same time, the nationalization of other industries contributing the entry of capital into poultry industry, particularly in the Punjab, resulted in the poultry production boom. Commercial egg production increased from 624 million eggs in 1976 to 1223 million eggs in 1980. Broiler production increased from 7.2 million birds to 17.4 million birds during the same period. The increase volume of production was forced through limited marketing channels. Serious financial setbacks to poultry farming in Pakistan culminated from discontinuation of poultry exports; disease problems; high relative prices of poultry feed; deteriorating feed quality; and limited supply of feed ingredients. Poultry farmers faced with financial problems and seeking remedial measures formed the Pakistan Poultry Association in 1979 on the advice of the Federal Poultry Board.

Phase 4:

Depression and Adjustment 1981-1990.

Disease problems posed a serious threat to the sound development and consolidation of the industry. The large Karachi poultry estates began to close in 1984 and a number of poultry farms closed in other areas of Sindh. Production showed a decreased growth or even depression during early 1980 particularly of increases in the Punjab, Baluchistan and NWFP. However, in the later part of 1980's starting from 1985 industry seemed to be readjusted with much rise in poultry number particularly in broilers. Faced with disease problems, lower productivity and numerous environmental and climatic difficulties, some

of more successful farmers decided to produce under more modernized conditions and to establish their poultry farms in cooler, less polluted area of the country. Breeding farms in Karachi and Punjab thus relocated to Abbotabad, to the base of the Murree Hills and to the Valley of Quetta. The farmers also built houses with controlled environments for breeders , broilers and commercial layers.

1991 to Now:

In this period was a disaster due to diseases, in 1990 the farmers suffered a great loss due to Hydro pericardium syndrome specially the farmers of Broiler and Broiler Breeder Birds. In 1991-92 an other disease Gumboro attacked the chicks of broiler, layer and parent flock that resulted in great mortality. With the passage of time efforts to reduce the incidence of these diseases and prophylaxes regarding vaccination and bio-security were done, this also resulted in establishment of new medicine companies and the importation of vaccines form abroad started. At national level institutes like Poultry Research Institute, Veterinary Research Institute and Agriculture University Faisalabad also done efforts to reduce these diseases.

In 1995 a new disease Avian Influenza appeared in Murree and Abbotabad and mortality in parent flock rose up to 80% due to this disease and set a challenge to the scientists at national level. Conferences at the diagnosis of this disease were conducted in which scientists discussed their point of views, after great loss measures were adopted that resulted in controlling the disease. In 1996 parent flock increased in number due to absence of planning that resulted in depression in the market and the price of chicks decreased several times its cost of production. This depression in Poultry market continued in 1997 as result of ban on serving of lunch in marriage parties that reduced the demand of poultry products in the market up to 40%. Slowly in 1998 it started improving and by increase in price of chick the companies got a great profit. 1999 again a syndrome like influenza broke that cause great loss in some areas while some areas were safe. The recent attack of bird flu has shaken the poultry industry. Now still there are many threats to the poultry industry the manor of which is the marketing problems of chicks to finished products, a great planning is required in this regard. At this time it is supposed

that big firms like Be Be Jan can be help full to reduce the instability of the market but it may be before time.

Present status of poultry in Pakistan

Every community in the world is responsible to provide its residents adequate food and guarantee them freedom from hunger and malnutrition. It becomes especially important when about 15-20 per cent of the world population is still unable to obtain sufficient food to meet minimum nutritional requirements for a healthy and productive life.

The current poor nutritional status is due to lack of sufficient energy and protein in the food. A balanced diet is essential for good health, vigour and productive capacity of the people. Protein plays an important role in the formation of balanced human diet. There are mainly two origins of proteins, animal and plant.

The human diet in Pakistan is deficient with respect to proteins of animal origin. At present 66 per cent of the people are deficient in protein. The requirement of protein is 102.7 gram per head per day while the available protein is 69.61 gram per head per day. The gap in requirement of protein is 33.09 gram. The main source of animal protein is beef, mutton, milk, poultry meat and eggs.

In developing countries like Pakistan where the population is growing at a faster rate, the gap in production of food especially of animal origin is widening year after year. The animal protein shortage seems still more grave especially when it is compared with the protein intake of various developed countries like U.S.A., Canada, Germany, France, Japan and U.K., where consumption of protein is 79-95 gram per capita per day of which 46-65 gram is protein of vegetable origin. The nutrition dilemma demands a special focus to overcome the existing deficiencies with particular reference to protein deficiency and availability from animal source.

To overcome the animal protein gap, poultry meat seems to offer much better prospects. It is capable of providing protein in terms of quality and can narrow the animal protein supply gap in minimum possible time as compared to other sources of animal protein. Until 1964, poultry production was a cottage industry in Pakistan. The management and production on modern scientific lines was not known and disease control measures were also not sufficient.

Government on her part, exempted this industry from income tax and sales tax, allowed export of table eggs, day old chicks and broiler on subsidized rates. Poultry production now has emerged as a good substitute of beef and mutton.

Problems in Poultry Industry

The poultry industry faces problems like the incidence of diseases, substandard and costly feed and inefficient marketing system. In all stages of development, there is a need for improving the efficiency and lowering the cost of distribution.

The higher losses during transportation are due to longer distance, bumpy roads and lack of modern packing techniques. Poultry farmers don't get fair returns. They put a lot of effort in increasing and developing their business but the commission agents usually get the produce from them at low prices and earn a lot of profit by selling at a higher price. Poultry farmers should do their job both as producer as well as commission agents. So, they can earn more profit out of their business. To improve the present marketing system of poultry, following suggestions may be helpful:

- To curtail breakage losses, packing and distribution system should be modernized
- Government should take immediate steps to improve the roads, for timely and quickly delivery of produce.
- To enhance economic viability of the poultry industry, the prices of feed and medicines should be kept within reasonable limits.
- Poultry coordination boards should be established at federal as well as provincial level to stabilize and maintain quality prices.
- Lack of grading at farm level does not promote the quality of eggs at a price premium. So practice of grading at producer's level would be encouraged and price information on