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Abstract

The Philippine duck industry is dominated by smallholder production. At present, about 99 percent of the demand for duck products is met by domestic production. However, it is envisaged that as trade liberalisation continues, the Philippine duck industry will face increasing competition from overseas as well as from other products. Continuing survival, and growth, of the industry depends on its ability to compete on a globalised market, which, in turn, depends on efficiency in the production and marketing systems relative to competitors. The research objective is to provide an overview of the industry and identify industry issues.

Key words: duck, poultry marketing, trade liberalisation

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Introduction

In 2002, the Philippine poultry industry generated 40.3 billion pesos ($A1.61 billion, based on the exchange rate of 25 pesos in a dollar), which accounted for 11 per cent of total value of agricultural production (ABS, 2003). The Philippine poultry industry has been protected through tariffs and other non-tariff measures in the past. However, imports of poultry meats (mainly frozen chicken and duck meats) have increased since the mid-1990s as a result of the signing of both global (World Trade Organisation) and regional trade agreements (Asia Pacific Economic Cooperation and ASEAN Free Trade Area). It is envisaged that as trade liberalisation continues, the Philippine poultry industry will face increasing competition both from overseas and other competing products. Continuing survival, and growth, of the industry, and individual sub-sectors (conveniently being divided into four sub-sectors: broiler chickens, layer chickens, native chickens and ducks), depends on their ability to compete in the global market, which, in turn, depends on efficiency in the production and marketing systems of the supply chains.

Because of significant differences in production and marketing systems, the trade impacts are likely to differ among the sub-sectors within the poultry industry. For example, the commercial broiler and layer chicken farms are generally large scale, highly advanced, geographically concentrated and vertically integrated production units while ducks and native chickens are produced by mostly geographically diverse and small scale, backyard production units. Despite being mostly small production units, ducks and native chickens accounted for more than 60 per cent and 75 per cent of the total duck and chicken inventory in 2002, respectively. Typically, the marketing chain for commercial chickens is relatively short and efficient, with integrated operators employing their own processing and marketing facilities. By contrast, ducks and native chickens rely mainly on traditional and much less efficient marketing channels.

The Philippine duck industry is small compared to chicken. However, it is quite unique and has a special role in the Filipino culture. The uniqueness comes from the way that duck eggs are being utilised. Unlike other Asian countries where duck eggs are processed mainly into salted eggs and century eggs, more than 80 per cent of duck eggs in the Philippines are processed into “balut”. Balut is sometimes referred to as “embryonated egg” or “incubated eggs” because the eggs are harvested and consumed when the embryos are between 14-18 days old. Balut is considered a delicacy by the Filipinos for its unique taste and nutritional

value. It is also unique because balut is available only from street vendors and only in the late evening. Such a distribution method, despite its cultural significance, may place limits on the demand. A second feature of the Philippine duck industry is that duck meat production is mainly a by-product of balut production, derived from mainly from excess males and culls. As such, the supply and use of duck meant are quite limited. Another feature of the Philippine duck industry is that 75 percent of the ducks are raised by smallholders with less than 100 heads per household. As such, it is a main source of low cost animal protein and incomes for the poorer sector of the population particularly in the rural areas. However, the Philippine duck sector has received little attention from either the researchers or policymakers in terms of its economic and social value. The research objectives of this paper are to provide an overview of the Philippine duck industry and to identify marketing problems issues facing the smallholder duck producers in the Philippines. In the overview, we will look at the trends in production, consumption and trade, as well as government policies that impact on the sector.

Overview of the Philippine duck industry

Ducks are considered one of the most versatile avian species that are of commercial significance, because they can subsist under a wide range of climatic and nutritional conditions. Some of the advantages of the raising of ducks over chickens include inexpensive, non-elaborate housing facilities and little attention and less space per head for rearing. Additionally, ducks are shown to be relatively hardy and resistant to common avian diseases, and the birds feed on a variety of food. As such, they are preferred and commonly raised by smallholders in rural areas. Duck eggs are larger in size, have thicker shells and unique flavour. They are also more suitable for processing into value-added products. They usually command higher prices than commercial chicken eggs.

The Philippine duck industry is composed mainly of the Mallard (*Anas platyrhynchos* L.) for egg purposes and only a small proportion for Muscovy (*Cairina moschata* L.) that is used for meat production. In addition, the majority of Mallard duck eggs (nearly 80%) are used for the production of ‘balut’. The rest of duck eggs are used either as table eggs or as component of bakery products or processed into ‘penoy’, salted eggs, and century eggs. Balut and penoy are incubated duck eggs that are not fully hactched. The fertile eggs are sold as ‘balut’ where the incubation is interrupted at around 14^{th} to 18^{th} day while the infertile eggs or dead embryos are sold as ‘penoy’. Both are Filipino delicacies.

- **Production**

In the Philippine poultry industry, ducks rank a distant second to chickens in economic importance as sources of animal protein and income. In 2002, there were 125.25 million heads of chickens with only 10.22 million heads of ducks with a ratio of about 12 chickens for every one duck. Although relatively small compared with the boiler and layer chickens, the contribution of ducks to the Philippine economy cannot be underestimated. In 2002, the value of production from duck eggs and meat amounted to 2.67 billion pesos. These values were higher than the value of production compared with that of carabao (P 2.53 billion), dairy cattle (P 76.07 million) and goat (P 2.28 billion). The relative significance of the poultry sector and its sub-sectors can be seen from Table 1 in terms of their contribution to the total value of agricultural production during 2000-2002. As indicated, the value share of the poultry industry has increased from 11.90 per cent in 2000 to 13.70 per cent in 2002. For the poultry sub-sectors, the value shares were 10.10, 2.69, 0.48 and 0.43 per cent in 2002 for chicken meat, chicken eggs, duck meat and duck eggs, respectively.

Table 1. Value of poultry production by sector, 2000-2002

	2000		2001		2002	
Sub-sectors	In million pesos	Percent (%)	In million pesos	Percent (%)	In million pesos	Percent (%)
Chicken Meat	23,510.38	8.51	25,773,99	9.38	29,717.05	10.10
Duck Meat	1,348.29	0.49	1,473.65	0.54	1,402.91	0.48
Chicken Eggs	6,872.71	2.49	6.794.36	2.47	7,896.94	2.69
Duck Eggs	1,145.27	0.41	1,154.92	0.42	1,270.95	0.43
Poultry Total	32,876.65	11.90	35,196.92	12.81	40,287.84	13.70
Crops	125,961.27	53.28	137,077.89	49.90	146,399.25	49.78
Livestock	48,606.05	17.60	50,441.07	18.36	52,287.96	17.78
Fishery	47,547.34	17.22	52,011.47	18.93	55,131.62	18.75
Total	276,185.49	100	274,727.35	100	294,106.68	100

Source: Report on the Performance of Agriculture, January-June 2002, Livestock and Poultry Statistics Division, Bureau of Agricultural Statistics.

The production figures in Table 2 also show the significant differences in the size of the two sub-sectors (chicken eggs and duck eggs). The Bureau of Agricultural Statistics (BAS, 2002) estimated the volume of production in 2001 to be 246,200 Mt for chicken egg and 53,920 Mt for duck eggs (Table 2). The values of production in 2002 were ₱ 7.90 billion and ₱ 1.27 billion for chicken eggs and duck eggs, respectively. While the production of chicken eggs has shown a steady increase during the 1991-2001 period with an average growth rate of 3.72 per cent per annum, the production of duck eggs has stagnated since the late1990s after experiencing significant growth in the first half of the 1990s.

Table 2. Chicken egg and duck egg production, Philippines, 1991-2001.

	PRODUCTION (in Mt)	
	Chicken egg	Duck egg
1991	170,810	33,400
1992	180,520	36,750
1993	202,100	39,200
1994	196,040	41,570
1995	199,910	47,690
1996	205,590	54,460
1997	222,870	52,960
1998	227,000	53,100
1999	229,880	52,650
2000	243,380	53,470
2001	246,200	53,920

Source: Supply and Utilisation Accounts, various issues, Bureau of Agricultural Statistics.

In 1950, when the population inventory of ducks in the Philippines was first made, there were only 709,000 head (Table 3). Since then, the population has increased, with the population

growing close to 9 million heads in the mid-1990s. The significant increase in the number of ducks in the 1990s could be attributed to the introduction of the commercial feeds for ducks. In 2001, the estimated number of ducks was 9.83 million heads. During the 1991-2001 period, the average growth rate was estimated to be 1.74% per annum. Most of the growth occurred in the commercial sector which uses mainly commercially formulated feeds. The percent share of ducks raised under commercial scale increased from about 12% in 1991 to 23% in 2001. In 2002, about 78% of ducks are still raised in small scale, backyard operation, with less than 100 heads per household.

Table 3. Population of ducks in the Philippines, 1950-2001.

YEAR	NO. OF HEAD (‘000)	YEAR	NO. OF HEAD (‘000)	YEAR	NO. OF HEAD (‘000)
1950	709	1978	5,365	1990	7,356
1955	1,696	1979	5,338	1991	8,268
1960	2,231	1980	4,667	1992	8,348
1965	1,478	1981	4,783	1993	8,707
1970	2,132	1982	4,711	1994	8,187
1971	2,352	1983	5,267	1995	9,072
1972	2,600	1984	5,761	1996	9,470
1973	2,906	1985	5,221	1997	8,923
1974	NA	1986	5,208	1998	8,824
1975	NA	1987	5,252	1999	8,614
1976	4,104	1988	5,833	2000	9,246
1977	4,228	1989	6,501	2001	9,827

Source: Ducks: Inventory Estimates, Livestock and Poultry Statistics Division, Bureau of Agricultural Statistics.

- **Consumption**

Consumption of poultry products in the Philippines is relatively low compared to neighbouring Asian countries. In 2001, the per capita consumption of chicken eggs, chicken meat, duck eggs and duck meat were 2.91, 7.68, 0.65 and 0.14 kg, respectively (Table 4). In addition, there was not much increase in consumption in the past decade, except for chicken meat. One of the reasons that consumption of poultry products is low with little growth was due to their high prices. Average farm gate prices for chicken eggs, chicken meat, duck eggs and duck meat were 62.55, 58.19, 46.25 and 54.25 pesos per kilogram in 2002, respectively. In addition, the egg industry has been hurt by the negative publicity associated with the level of cholesterol in eggs.

Table 4. Per capita consumption of poultry products, Philippines, 1991-2001.

YEAR	Chicken egg	Chicken meat	Duck egg	Duck meat
1991	2.50	4.56	0.50	0.10
1992	2.59	5.55	0.54	0.12
1993	2.84	5.57	0.57	0.13
1994	2.63	5.49	0.57	0.13
1995	2.69	5.85	0.66	0.14
1996	2.70	6.51	0.73	0.15
1997	2.87	6.96	0.70	0.15
1998	2.86	6.75	0.68	0.15
1999	2.83	7.03	0.66	0.14
2000	2.93	7.20	0.66	0.14
2001	2.91	7.68	0.65	0.14

Source: Bureau of Agricultural Statistics, 2002

- **Trade**

During the last 10 years (1991-2000), imports of duck eggs have fluctuated between 841,843 pieces (an equivalent of 56 Mt based on the conversion rate of 15 pieces to one kilogram) in 1991 and 3,279,296 (an equivalent of 219 Mt) in 1994 (Table 5). In 2000, it was reduced to 1,904,285 pieces (an equivalent of 127 Mt). Imports of duck meat have likewise fluctuated

from 6.3 Mt in 1991 to 249 Mt in 2000 with a peak of 421.84 Mt in 1997. These changes can be attributed to the more liberal trade regimes and the changes in exchange rate, particularly the devaluation of pesos following the Asian financial crisis in the late 1997. Imported duck products were mostly coming from China (University of Asia and the Pacific, 2000). Duck eggs have also been exported to other countries mostly in the form of half-hatched eggs (partly incubated such that each egg contains an embryo about 20 days old). In 2000 and 2001, 11 and 10.4 Mt of duck eggs were exported, respectively. No record of duck meat exportation was shown during the same period.

Table 5. Importation of duck eggs and meat, Philippines, 1991-2000.

YEAR	VOLUME OF DUCK EGGS (No.)	VALUE FOB ('000 U.S. $)	VOLUME OF DUCK MEAT (Mt)	VALUE FOB ('000 U.S. $)
1991	841,843	14,554	6.300	12.000
1992	1,556,938	34,517	8.600	35.000
1993	3,180,538	123,740	60.950	146.000
1994	3,279,296	125,256	150.740	302.000
1995	2,368,032	169,655	189.030	248.000
1996	2,636,043	193,177	260.790	328.000
1997	2,347,348	177,092	421.840	413.000
1998	2,515,613	215,376	318.679	422.516
1999	2,578,799	173,844	302.000	322.000
2000	1,904,285	97,834	249.000	182.000

Sources: National Statistics Office, Bureau of Agricultural Statistics; FAO STAT Agricultural Data.

- **Marketing**

Because more than three quarters of the ducks in the Philippines are raised in small scale backyard production, there are no major players in the duck industry at the national level. By contrast, the broiler chicken industry is dominated by four major integrators, including San

Miguel Corporation, Swift Foods, Vitarich Corporation, and Tyson Agro-Ventures. Together, they have captured 90% of the supply of broiler chickens in the Philippines. As a result of smallholder production, the marketing channels for duck products are significantly longer and less efficient than the commercial broiler or layer chickens.

There are five identified marketing channels for ducks, including fresh and processed duck eggs (balut, penoy, salted eggs and century eggs) and day-old ducklings (PCARRD, 1991). These are:

Fresh eggs: Producer → Assembler-wholesaler → Retailer → Consumer. This type of outlet involves the assembling of fresh duck eggs in the producers' area and selling to retailers in the market who in turn sell to consumers.

Processed eggs: Producer → Assembler-wholesaler → 'Balut' Operator → Retailer → Consumer. From the producers' farms the assembler-wholesaler gathers the fresh duck eggs and sells them to a 'balutan' or balut processor, who generally produces balut as the main product and penoy, salted and century eggs as by-products using infertile eggs or off-size eggs. Once the processed eggs are ready, the retailers procure the eggs from the balutan and sell them to consumers. 'Balut ' and 'penoy' are sold only at the night time by street 'balut' vendors while salted and century eggs can be found in the grocery stores and supermarkets. Alternatively, the balut operators may bypass the assembler-wholesaler and buy directly from large egg producers. As such, the channel *(Producer → 'Balut' Operator → Retailer → Consumer)* is shortened. The channel may also involve another type of assembler-wholesaler between balut operators and retailers. This type of channel *Producer → Assembler-wholesaler → baluta operator → Wholesaler-Retailer → Retailer → Consumer* is generally the longest and understandably is only used for more distant or dispersed markets.

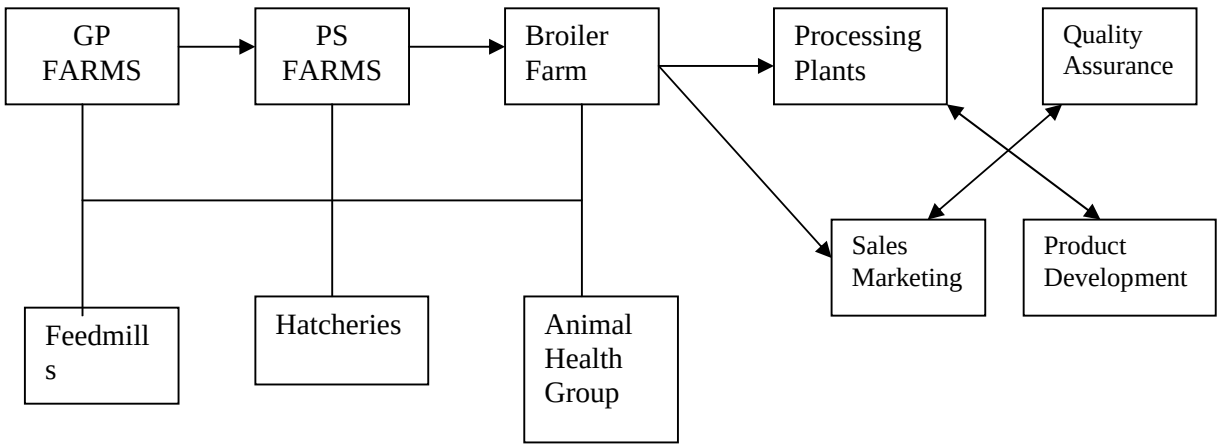
Day-old ducklings: Producer → Balutan/Hatchery → Duck Raiser. Day-old ducklings can be purchased from either the balutan or specialised hatchery. In most cases, the balutan or specialised hatchery accepts orders from the duck raisers and then procures and hatches the eggs and sells them to the duck raisers as replacement stocks. The eggs that are used for balut are generally not separated or distinguished from those meant for producing ducklings. As such, the so called "replacement stocks" were not selected based on progeny or performance but by chance or by visual inspection of the balutan operators.

The length and number of middlemen in the distribution channel have a significant effect on the price and the marketing margin of the duck products. For a typical marketing channel for balut, the consumer peso distribution was found to be 55%, 16%, 5% and 25% for the duck egg producer, 'balutan'/processor, wholesaler-retailer and retailer, respectively (Maravilla 1994).

Government policies

Because the Philippine duck sector has received little attention from the policymakers, there are no specific government programs or policies that are pertaining to ducks. However, some umbrella livestock and poultry policies are applicable to ducks and are reviewed here, including livestock development policy, trade policy and marketing policy.

Figure 2. Integrated Poultry Operation



Source: Mascariñas, 2001

1. Livestock Development Policy

The most significant livestock and poultry development policy in the Philippines in recent years is the Republic Act 8435, otherwise known as the Agricultural and Fisheries Modernisation Act (AFMA). AFMA was enacted in 1997 as a support to the livestock industry. One of the primary purposes of the law is to ensure that the poorest sectors of society, especially in areas where productivity is low, have equitable access to resources, income opportunities, basic support services and infrastructure. Additionally, the law is concerned with food security, rational use of resources, global competitiveness, sustainable development, empowerment and protection from unfair competition. The poultry industry is receiving special attention under the Act because of the widespread involvement of smallholders in production and marketing of ducks and native chickens.

There are two programs purported to operationalise the AFMA: the Agrikulturang MakaMASA (AMMP) Program under the Estrada Administration and the Ginintuang Masaganang Ani (GMA) program under the current Arroyo Administration. The AMMP was a brainchild of the Secretary of Agriculture during the Estrada Administration while the GMA is the brainchild of the Secretary of Agriculture of the current Arroyo government.

- ***Agrikulturang MakaMASA (AMMP)***

Conceived in the beginning of 1998, the Department of Agriculture started to implement the AMMP. Eight programs were developed, one of which is the Agrikulturang MakaMASA Livestock (AMLP). It is a program that aims at modernizing livestock farming practices and improving the lot of smallholder animal producers. It operationalizes the AFMA through the establishment of infrastructure, promotion of technology, enhancement of input and support systems, and upgrading of manpower capability. The program is designed to equip and prepare the livestock and poultry sector for various challenges such as trade globalization, worldwide economic and currency crises. The AMLP has six program components namely: 1) livestock enterprise development, 2) technology, information, promotion and capability building, 3) genetic improvement program, 4) animal health services, 5) post-production, regulation and marketing services, and 6) policy, industry, research and strategic projects. Each of the components is outlined below.

Livestock Enterprise Development Scheme. The two major programs under the Livestock Enterprise Development (LED) are the Multi-Livestock Development Loan Program

(MLDLP) and the Barangay Livestock Breeding Loan Program (BLBLP). The MLDLP or Window 1 loan program is a supervised credit program for livestock and poultry that encourages farmer-cooperators to raise different livestock of superior germplasm. Loan packages with 10% interest are made available through accredited rural banks and cooperative rural banks nationwide. Loan term ranges from 5 to 8 years with two-year grace period for modules payable in 8 years. The BLBLP or Window 2 loan program is an alternative facility for farmers to directly avail of quality breeding animals. Animals distributed to beneficiaries are paid in kind through the offspring produced. The implementing strategies of this program component include selection of stocks for distribution following the organized breeding scheme operation plan, organization of regional networks that will supervise and manage the livestock sourcing and capability building of the beneficiaries, and accreditation of a network of banks that can provide basic services to farming communities.

Technology, Information Promotion and Capability Building. The Technology, Information Promotion and Capability Building (TICPB) Program is a sustainable, technology-based training and information dissemination program that promotes an environment conducive to profitable livestock activities. It enhances the capabilities of DA-Regional Field Units (RFUs) and LGUs in promoting technology packages and services to the masses. The implementing strategies of this program component include development and diffusion of information and education materials through the appropriate communication media, identification and/or enhancement of techno-demo projects or model farms in every region to showcase livestock technologies, development of manpower capabilities, strengthening of DA-LGU and SCU extension linkages, and upgrading of selected DA-regional livestock centers and research stations.

Genetic Improvement Program. The AMLP Genetic Improvement Program aims to move the production systems of smallhold farmers from subsistence to commercial operation. Its current efforts to improve the animal genetic resources available to the livestock producers need to be strengthened through an institutionalized scientific selection and breeding program. This program involves genetic improvement, conservation and utilization. Genetic resource improvement involves the establishment, strengthening and management of Nucleus Farms (NF) for the production of genetically superior animals and genetic materials for use in the organized breeding activities and intensive artificial insemination program. Genetic

resource conservation involves the collection of superior local livestock breeds for further development at conservation centers. Genetic resource utilization involves strengthening and/or rehabilitation of production and breeding centers and artificial insemination (AI) stations through distribution of genetically superior stocks and materials to livestock producers with genetically superior stocks coming from the nucleus farms.

Animal Health Services. The provision of animal health services ensures an efficient system of livestock farming. Animal health services under the GMA program involve monitoring, preventing and controlling diseases of economic importance. Specifically, the major activities include foot and mouth disease (FMD) eradication program, strengthening of diagnostic and biologic laboratories and control and prevention of disease outbreaks such as hemorrhagic septicemia and fasciolosis.

Post-Production, Regulatory and Market Services. The efficient handling, processing, inspection and marketing is an important consideration to make in offering safe and quality livestock products to the consuming public. The implementing strategies include implementation of the Abattoir Development Program, strengthening of meat inspection service, rehabilitation of existing livestock auction markets (weighing scale loan program), strengthening of the activities of the animal products and by-products development center, operation of the regional animal feed laboratories, milk processing and marketing program, and provision of livestock product marketing services.

- ***Ginintuang Masaganang Ani (GMA)***

In 2000, due to the change in government, the GMA was introduced which focuses on poverty alleviation and food security and five commodity programs: rice, corn, high-value crops, fisheries and livestock. Like the AMMP which operationalizes the AFMA, the GMA is the banner program for agricultural development under the new government. The five commodity programs utilize the following strategies: (a) participatory approach, (b) LGU-led program implementation, (c) area-based approach, (d) capacity-building, (e) focused targeting, (f) productivity improvement, and (g) counterpart schemes (Department of Agriculture, 2003). They are outlined below.

Participatory approach. Participatory planning, implementation and monitoring and evaluation are done by stakeholders such as the state colleges and universities (SCUs), non-

government organizations (NGOs), and farmers' groups. The main resource for identifying GMA interventions is the local development plan of the provinces.

LGU-led program implementation. The local government units are the lead players in the implementation of the GMA program. The Department of Agriculture (DA) and Department of Interior and Local Government (DILG), along with the other concerned agencies, provide the necessary technical and financial supports.

Area-based approach. The program identifies interventions based on the domain specificity of the program areas. A situation analysis is done which focuses in the water, soil, climate, production, human resources, processing and marketing endowments of the program area. The area comparative advantage or competitive edge as well as the scale economies are the main criteria in selecting program areas and corresponding interventions.

Capacity-building. The program promotes local capability-building in the areas of participating planning-implementation, monitoring, evaluation, research and extension, processing, marketing and entrepreneurship.

Focused targeting. Programs are developed based on the situation of the people. These programs are designed for small- and large-scale farmers. Likewise, programs are identified for "winners" or impact areas and also for marginal areas.

Productivity improvement. The GMA program promotes sustainable development not only in terms of environmentally sound interventions but also in terms of project viability. This necessities interventions that are self-sustaining in terms of profitability, management and resources.

Counterpart schemes. The DA, DILG, LGUs and other concerned agencies enter into program financing arrangements for effective program implementation. Arrangements include personnel, facilities and services which are institutionalized in the form of a memorandum of agreement signed by concerned agencies.

Under GMA, the National Livestock Development Plan for 2000-2004 and the National Poultry Development Plan for 2000-2004 were also formulated. The National Poultry Development Plan for 2000-2004 aims to meet the minimum nutritional requirements of every Filipino for poultry meat and eggs. Its major components are production, post-production, marketing and policy. To attain these objectives, the implementing strategies are to focus on the following areas:

1. Genetic improvement of layers, broilers, native chickens and ducks.
2. Establishment of production centers for small farmers at the local government level.
3. Animal health services
    - Creation of an inter-agency Poultry Development Committee
    - Creation of a Technical Working Group composed of veterinarians from government, private and academic sectors
    - Organization of a network of laboratories to examine poultry samples
    - Coordination of government, private and academic efforts in the conduct of disease surveillance and research of poultry diseases
    - Establishment of a Poultry Health Information System (PHIS) to collate and process data from all sources and disseminate processed information.
4. Nutrition
    - Assurance of good quality feeds
    - Ensure availability of corn and other feed ingredients.

The two programs AMMP and GMA, both intended to operationalize the AFMA but with conflicting goals and strategies, have caused confusion both at the provincial and local government levels and have delayed progress that could have been made if policies were more consistent. Amidst all that, the government has continued, since the 1960s, to encourage the importation of breeding stock, feedstuff, poultry equipment, veterinary drugs and feed additives. It has not developed policies that support and created infrastructure for the development of an indigenous or home-grown poultry industry despite the fact that ducks and native chickens have the potentials for improved meat and egg production without the constraints of high input costs that are associated with the commercial poultry sectors. The government has yet to develop and implement a nationwide program for poultry development that would help alleviate poverty and ensure food security for the great majority of the Filipinos in the countryside.

2. Trade Policies

The intervention of the Philippine Government in the poultry industry has always been an important part of the agricultural policies in the Philippines. This is because of the desire to be self-sufficient in poultry products. The trade interventions have taken different forms that broadly can be classified into tariff and non-tariff. These interventions have affected the relative prices of both output and input prices of poultry products. This has resulted in different degrees of protection to different producer as well as consumer groups. Further, there are different and sometimes conflicting policies that affect the poultry industry.

The flow of poultry and poultry products into the country has been regulated by both tariff duties and quantitative restrictions. Except however for the importation of eggs in 1951, the trade in poultry products has been regulated mostly through tariffs. These tariffs serve two purposes – raise revenue for the government as well as protect domestic poultry producers by raising domestic price above border price. Historically, tariff protection has been more favorable to the poultry industry than other livestock sectors.

Since 1981, the Philippines has pursued a series of Tariff Reform Programs which consisted of (a) the "tariffication" of quantitative restrictions; (b) the simplification of the tariff rate structure to a narrower rate range, and (c) the reduction in the tariff protection. The objective of the reform program has been to promote production efficiency and therefore promote international competitiveness of the local products (Cororaton, 1998). The start of the tariff reform program signaled therefore the lowering of the tariff protection for the poultry industry.

The Philippines is committed to a number of multilateral and regional trading arrangements. Its global commitment is through the Uruguay Round Agreement of the World Trade Organization (WTO). Regionally, it is committed to the ASEAN Free Trade Area (AFTA) through the instruments of the Common Effective Preferential Tariff System (CEPT), and the various initiatives of the Asia-Pacific Economic Cooperation (APEC).

- **WTO**

The Senate ratified Philippine accession to the WTO in December 1994. Although with a few exceptions, the country did not reduce tariffs from its unilateral reforms, it committed itself to the following:

- to bind tariff rates at a ceiling rate of 10 percentage points above the 1995 applied rate on some 744 agricultural tariff lines; and

- to convert all existing quantitative restrictions on agricultural imports to tariff equivalents (except rice for which a 10-year delay was agreed).

Among the agricultural products affected are poultry meat and live poultry. For the first time, imports of poultry and other agricultural products started to enter the Philippine market through transparent tariff-quota regimes that allowed in-quota volumes at the normal applied tariffs and out-quota volumes at much higher tariffied rates. There has been a lot of criticism from the private sector about the errors in committing to a very large in-quota volumes, one of which is fresh/chilled/frozen poultry. The in-quota volumes (or MAV) for poultry were 22,525 Mt (1995/96), 16,160 Mt (1997), 16,701 Mt (1998), 17,746 Mt (1999), 18,790 Mt (2000), 19,834 Mt (2001), 20,879 Mt (2002), and 21,923 Mt (2003). The utilisation rates ranged from 4.3% in 1995/96 to as high as 90.9% in 1999 (Department of Agriculture, 2003). Another criticism is that these commitments on *tariffication* and the in-quota volumes were made without sufficient public consultations (ITC/UNCTAD, 1998).

- **ASEAN Free Trade Area (AFTA)**

The AFTA was ratified in 1993. This was an attempt to bring down trade barriers and enhance economic cooperation among the ASEAN members, namely, Brunei Darussalam, Indonesia, Malaysia, Philippines and Thailand, Singapore, Vietnam, Laos, Myanmar. This is referred to as the Preferential Trading Agreement. And the Common Effective Preferential Tariffs or CEPT is the main implementing mechanism for AFTA. The main objective is to reduce tariffs to 0-5% over 15 years. The CEPT Scheme is used by AFTA as the main instrument to achieve its main goal of increasing ASEAN's competitive edge as a production base geared for the world market. It provides for the elimination of non-tariff barriers and the reduction of tariffs on, among others, capital goods, and processed and unprocessed agricultural products, to 0-5 percent by 2003 starting January 1993.

- **Asia-Pacific Economic Cooperation (APEC)**

In the 1993 and 1994 Summits, the APEC members namely Canada, China, Hongkong, Indonesia, Japan, Korea, Malaysia, Mexico, Singapore, Thailand and United States firmly committed to creating free trade and investment zone in the region by 2020. In the 1997 Vancouver Summit, the plan of early voluntary sectoral liberalization in 15 market sectors was adopted. The long-term goal of APEC, as set out in Bogor, is to achieve a free and open trade and investment in the Asia-Pacific region by 2010 for developed member economies

and 2020 for developing member economies. To achieve this goal, the 18 member economies formulated their Individual Action Plans (IAPs) in 1996. The IAPs map out individual member economy's concrete steps and actions towards the attainment of free trade and investment in the region.

The Philippine commitments in its IAP are consistent with its commitments with WTO and AFTA. On tariff, the commitment is to gradually reduce or phase down tariffs, targeting a uniform rate of 5 percent, except for sensitive products, by the year 2004. This is considerably more liberal and immediate than the country's WTO commitment to bind tariffs at their 1995 levels. Because the Philippines has committed to extensive tariff reduction, it is one of the four APEC economies whose progress against their IAP is ahead of the commitments embedded in the Bogor Declaration. The other three economies in this position are Chile, China and Indonesia (Austria, 1998).

Table 6 shows the change in tariffs over time for poultry and ducks as a consequence of the different tariff commitments of the Philippines under the WTO, AFTA and APEC. Note the substantial reductions in the tariffs under these different agreements. For the period 1993 to 1994, the tariffs were 50 to 70% but these would decline to 40% in 2003 and 2004.

Table 6. In-quota and out quota tariff rates for selected poultry products, 2002-2004

HS CODE (Commodity)	2002		2003		2004	
0207 (Poultry)	In	Out	In	Out	In	Out
Frozen Chicken (Whole)	40	60	40	40	40	40
Frozen Chicken (Liver)	40	60	40	40	40	40
Frozen Chicken (Cuts/Other Offals)	40	50	40	40	40	40
Frozen Ducks (Whole)	40	50	40	40	40	40
Frozen Ducks (Cuts/Other Offals)	40	60	40	40	40	40

Source: Department of Agriculture, 2003

Given all these commitments, a central policy question facing the Philippines given the less than ideal economic situation is whether it will persevere in the road to openness or will it take the path of least resistance within the context of protectionism.

3. Marketing Policies

There are a number of other important policies related to the poultry marketing. These are as follows:

- Price Controls

Direct price intervention has been used to maintain a stable consumer price for poultry and other livestock products. It is a way of counteracting the impact of tariffs on domestic prices. The prices of poultry meat and eggs for example have been subject to price control for the benefit of local consumers. The prices are usually announced to the public through the radio and TV. These prices are enforced through periodic inspection of retail stores by the representatives of the Department of Trade and Industry who make the unannounced visits to the retail stores to check whether they are selling the goods at prices higher than the maximum prices mandated by government. Corresponding penalties are imposed on those caught selling higher than these mandated prices. This is especially done during those times when it is thought that prices might go up due to increasing oil prices.

Oftentimes, government also seeks to distribute poultry and other livestock products in rolling stores and other distribution centres at controlled prices. This is an effort by government to provide affordable poultry/livestock products and other basic food necessities to the lower income bracket of the population by fielding out vehicles (rolling stores) to the identified low income communities and selling these basic commodities at subsidized prices. However, this has been largely ineffective in controlling the increase in prices due to upward pressure exerted by the tariff policy on domestic price of livestock products, more specifically poultry.

- Grades and standards

Standardization of meat and poultry products started in 1988 with the Bureau of Standards acting as the initiator and assisted by agencies like the Bureau of Animal Industry, the universities, private food manufacturers, and the Philippine Standards Association. Among

the standards being formulated then was the Philippine Standard Specifications for Fresh, Chilled and Frozen Poultry. Poultry meat may be classified into the following grades such as: Grade A – more fleshiness and no defect in the muscles, Grade B – average fleshiness, Grade C – Less fleshiness and with defects in the muscles.

Class and grade standards for meat have for their primary purpose the establishment of a system to facilitate marketing and merchandizing of carcasses and meat products. It is also a potent means of guiding the producer into the quality channels most appropriate to the consumer's value on specific grades, thereby permitting the producer to plan accordingly and produce the maximum quantity of the most profitable grades. Meat grading involves the principle of economically important differences in quality of meat and quantity or expected yield.

- Auction Markets

Beginning with PD No. 7 of September 1972 that established the livestock 'Oksyon" Markets, marketing has become more organized. Some of the benefits available to farmers/sellers/ buyers in the livestock market are (1) presence of weighing scale, (2) prices of livestock and meat are posted in the market, (3) availability of corrals, sheds and pens, (4) presence of grade charts to help farmers see the class to which his animal belongs, and (5) availability of stocks. However, the growing volumes of hogs and chickens produced under contract do not move through auction markets. Most integrators have their own collection and processing facilities and the linkage is well coordinated and at relatively low cost.

- Other Rules and Regulations

Various legislations such as Presidential Decrees, Executive Orders, Letters of Instructions, Memorandum Circulars, etc. are passed by Congress of the Philippines and/or issued by the Office of the President, the Department of Agriculture (DA) for purposes of improving production, distribution and marketing of feeds, livestock and livestock products for the benefit of producers as well as consumers

Problems and issues

Over the years, the percentage share of total production by smallhold raisers has decreased from 88% in 1990 to 78% in 2001. It is important to note that the overall increase in total

production is accounted solely by commercial producers. This decline in the percentage share of smallholder backyard production can be attributed to a number of factors – the high cost of feeds, lack of access to credit, and limited access to technical know-how. All of which has resulted in low productivity and variable performance.

High cost of feeds. At 65% egg production, cost of feeds account for 82% of total costs of producing ducks on a per egg basis. Considering the limited capital of smallhold farmers, it is not surprising to find that they are only capable of producing a very limited number of ducks. They are unable, therefore, to achieve the economies of scale of production, resulting in higher cost of production and lower net returns.

Lack of access to credit. Unlike the other livestock and poultry commodities, i.e., swine, cattle, and chicken, there is no credit financing arrangement specific for raising ducks. Agricultural loans are available from private banks but the relatively high interest rates and the requirements for collateral and paper work tend to deter smallhold farmers from availing of loans. Farmers find that credit provided by informal lenders is more accessible but the interest rates are much higher than the commercial banks.

Limited access to technical know-how. Backyard farmers tend to practice the production methods that they inherited from their ancestors. Production technology continues to improve with the advent of technological breakthroughs but many of the backyard farmers have not benefited from new technologies. This has limited their productivity gains. The first reason for this is the limited access to information on the new methods of production. This is partly due to the limitations of the extension services being provided to them. Secondly, the majority of these smallhold raisers have limited education which also limits their capacity to adopt these new techniques.

Although the commercial sector may fare better than their backyard counterparts, it still faces several major issues, including lack of quality stocks, seasonality of demand for balut and salted eggs, lack of quality standards, and poor distribution and marketing (Lambio, 2001). They are summarised below.

Lack of quality breeding stock. "Lack of quality breeding stock" was cited as the major issue in egg-type duck production in the Philippines in the 1980s (Coligado, 1985; Arboleda, et al., 1985). However, the problem persists (Lambio, 2001; Department of Agriculture, 2001; PCARRD, 2000). One of the factors contributing to the problem may be the way duck

eggs are utilised. As mentioned before, duck eggs are primarily being utilised for balut while duck meat and penoy are by-products of producing balut. Likewise, eggs not suitable for incubation are processed into salted eggs and century eggs (Lambio, 2001). The fact that the majority of the total duck egg production is used for producing balut means that little is left for the production of replacement stocks. The Bureau of Agricultural Statistics estimated that less than 2% of total duck egg production are used for hatching purposes. As such, duck raisers in general depend only on what stocks (day-old ducklings or ready-to-lay) are available from the balutan operators or duck pullet growers. It also appears that duck raisers do not give any importance to the quality of stocks during replacement. Replacement stocks are often obtained from own flock and do not have the benefits of appropriate selection procedures and mating systems. And because the population is limited, mating of related individuals or inbreeding becomes inevitable which tends to result in loss of vigour and fertility. Since the overall performance of ducks is a function of the genetic make-up, lack of quality stocks is the major contributing factor to poor performance of a majority of duck farms in terms of egg production, fertility, hatchability and egg quality.

Seasonality of demand. The demand for duck eggs is very seasonal. The demand for "balut" and "penoy" is higher in October to January and is substantially lower in March to June, compared to the remaining of the year. The demand for salted eggs is higher in April and lower from November to June, compared to the remaining of the year. On the other hand, duck egg production is highest in the fourth quarter and second highest in the second quarter. The mismatch of demand and supply means that prices are variable throughout the year. Indeed, prices are generally higher in the third quarter and lower in the fourth quarter. The problem with price variability is that it tends to distort the price signal, leading to bust and boom production cycles.

Absence of quality standards and market information. Although there are some grading schemes for fresh eggs based primarily on size, there are no criteria for pricing balut, penoy or salted eggs. As such, there are instances where the products supplied are either not consistent in quality or are of low quality, which tend to have a negative impact on demand (Maravilla, 1994). Even when grades and standards exist, they are not enforced. In addition, the market information system in the Philippines is very much undeveloped. Prices of the same products between two markets may differ significantly even if they are just a few kilometres apart. Also, producers often complained about being exploited by "viajeros" or

middlemen who are better informed than the producers. In most cases, viajeros are the only information source to producers in more remote areas. The asymmetric information tends to place producers in a disadvantageous position when it comes to price negotiation. The egg industry is also vulnerable to the "boom and bust cycle" due to the lack of market information. In most cases, production decisions are based on personal intuition or past experience, rather than market conditions. As such, they tend to miss the peak of the market or hit the bottom of the market. The results are a less stable market and a less profitable operation.

Inefficient distribution and marketing. As discussed previously, ducks eggs tend to pass through several intermediaries before reaching the final consumer. Although the intermediaries provide useful marketing services in most cases, in an imperfect market where market information and quality standards are lacking and markets are dominated by a few players, there is the tendency for the dominate players to overcharge for their services. Since an efficient marketing system depends on accurate price signals, a underpaid producers tend to produce less while an overcharged consumer tend to consume less. In either case, the industry or the market is smaller than it otherwise would be. An efficient marketing system also depends on infrastructure that facilitates the creation of time, place and form utilities. This means basic infrastructure such as processing, storage and transport facilities must be put in place before value can be created. Given that the Philippine duck industry is dominated by small producers there is little economies of scale to be gained in either production or marketing and as such costs are inevitably higher than large scale production.

Conclusion

The Philippine poultry industry is highly diverse because of significant differences in production and marketing systems. For example, commercial broiler and layer chicken farms are large, integrated and highly advanced while duck and native chicken farms are largely small scale, backyard operations. Further, the marketing chain for commercial chickens is relatively short and efficient, with integrated operators employing their own processing and marketing facilities. Ducks and native chickens, on the other hand, tend to rely on traditional and much less efficient marketing methods. These sub-sectors of the industry, including commercial broiler and layer chickens, native chickens and ducks, are thought to vary greatly in terms of international competitiveness and likely impact from trade liberalisation.

Several studies have been conducted to examine the competitiveness of the Philippine poultry industry, particularly the commercial chickens (eg Jarvis, 1993; Gonzales, 1995; Mangabat, 1998; SEARCA, 1999; University of Asia and the Pacific, 1999; PCARRD, 2000; Mateo, 2001; Arboleda, 2001). It was found that the Philippine broiler industry was a high cost producer, relative to major exporting countries such as Brazil, China, Thailand and USA because of its heavy reliance on imported inputs (eg feedstuffs, vaccines and breeding stocks) Arboleda (2001). Although little research was done with respect to the cost structure, and competitiveness, of small scale duck production in the Philippines, it was thought to have a competitive advantage over commercial and imported chickens because of strong consumer preferences for its unique tastes, as well as their resistance to disease and difficult living conditions.

The crucial issues identified for ducks were: supply of quality breeding stock, inefficient marketing system, lack of credit, and seasonal demand of product. Many of these problems are a manifestation of market imperfection, particularly lack of information both on production technology and market demand. As such, a first step towards improving access to information is for the policy makers both at the government and non-government organizations to provide extension services and training in areas where knowledge is lacking and to collect and disseminate market information to those in need. In the longer term, more research is needed in terms of genetic improvement of the indigenous flocks, improving management practices and better understanding of market demand for duck products.

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