Farm Animal Welfare in Colombia

A country situation report

WSPA

World Society for the Protection of Animals

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List of acronyms

ACP	Colombian Association of Pig Producers
CAN	Andean Community of Nations
CEGA	Centre for Agriculture and Livestock Studies
CIPAV	Centre for Research on Sustainable Systems for the Agricultural and Livestock Sector
DANE	National Administrative Department for Statistics
DNP	National Planning Direction
ENA	National Survey of the Agriculture and Livestock Sector
FAO	Food and Agriculture Organisation of the United Nations
FENAVI	National Federation of Poultry Farmers of Colombia
FNP	National Fund for the Pig Industry
FONAV	Poultry Farmers' National Fund
ICA	Colombian Institute for the Agricultural and Livestock Sector
MERCOSUR	Common Market of the South
NAFTA	North American Free Trade Agreement
OIE	World Organisation for Animal Health
PIB	Gross Domestic Product
PPC	African swine fever
SIPSA	Agricultural and Livestock Sector Price Information System
EU	European Union
USDA	United States Department of Agriculture
UGG	Large Cattle Unit
WSPA	World Society for the Protection of Animals

The main purpose of this report is to provide a useful insight into the Colombian farm animal industry by assessing its economic, technical and animal welfare indicators, quantifying the national production and its impact, and addressing some of the broader questions that have arisen as a result of similar studies carried out on these issues.

This report was developed from information collected through groups such as the Pig Breeders Association (ACP), the National Federation of Poultry Farmers of Colombia (FENAVI), the Poultry Farmers' National Fund (FONAV), the Colombian Institute for the Agricultural and Livestock Sector (ICA), the National Fund for the Pig Industry (FNP), the Food and Agriculture Organisation of the United Nations (FAO) and through other groups who provided data on poultry, pig and cattle activities in Colombia. The collection of this information was complemented by visits to farms, slaughterhouses and livestock fairs around the country.

Colombia has a surface area of 1,141,748 km^2 and a population of approximately 45 million inhabitants. The growing urban population accounts for 75% of the total population. This phenomenon is accentuated by the internal armed conflict, which particularly affects rural areas.

Colombia's economy is the fourth largest in Latin America. The agricultural sector is fundamental to the national economy, and makes up approximately 14% of the GDP. The bulk of the agricultural and livestock sector is made up by agricultural products other than coffee (46%) and livestock and their by-products (38%). Coffee accounts for 13% of the sector's production.

The poultry industry (for eggs and broiler chickens) and the pig industry predominantly use intensive farming systems, while the cattle industry still uses traditional methods in which the animals range freely on open pastures.

Current situation of farm animals

Pig farming

Colombia accounts for 1% of the world's pork production. Approximately 1,639,000 animals were slaughtered in 2005, and the country has an annual pork consumption of less than 2.7 kg/person, well under the world median of 15 kg/person. Although the pig inventory shows figures over 2,310,000, only 50% of the animals are bred under intensive conditions in 1,518 farms, which to a greater or lesser extent use intensive systems of isolation cages, cement or plastic floors, waste-disposal systems and balanced diets. The remaining 50% are generally reared as backyard animals or to supplement the farm's main activity. As a result, nutrition and husbandry are generally poor.

Current production barely meets the domestic demand, and a small excess demand is covered by imports. The internal marketing of pork has all the characteristics of an informal market, in which producers do not rely on a regular trading process. 81% of producers sell their livestock to middlemen, and prices depend on a set of variables such as the number of animals at the live market, the presence (or absence) of a middleman and the road conditions. Prices also vary according to the animals' live weight and appearance (white breeds always fetch better prices), regardless of their yield or the quality of their meat.

Broiler chickens

685,000 tonnes of chicken meat were produced in 2005 (FAO). To achieve this, 415 million animals were slaughtered, and there was an inventory of 120 million animals. The broiler chicken industry has grown at an extremely rapid pace over the last 15 years: annual consumption increased from 7.9 kg/person fifteen years ago to 15.5 kg/person in 2004.

The Colombian broiler chicken industry is characterised by vertical integration, with an ever decreasing number of small producers just managing to survive competition and high feed costs. They produce on a temporary basis, only re-entering the business when demand increases, for example just before the busy Christmas season. This industry is currently highly mechanised and has a high output.

There are 62 chicken slaughtering plants in Colombia. Poultry slaughtering must be done at the right time, because when animals are over 38 days old and when densities over 10 units per square metre are handled, animal mortality tends to increase due to edema and infarction. This explains why there is a tendency to slaughter 20% of the animals once they reach this age, especially if they are male.

Annual egg production reached 8,195 million units in 2005 (FENAVI), with an annual consumption of 165 eggs per person. Egg production is spread amongst a large number of producers, with flock sizes ranging from 500 to over 500,000 birds. Layers are placed in layer henneries 74% of the time and in cages in the remaining 26%, with variations in the technology, equipment and handling systems used. In supermarkets, eggs are now labelled and sold as being from 'happy layers', meaning they have been produced under the best animal welfare conditions.

Cattle

Colombia ranks as South America's third largest livestock producer. Cattle activity amounts to 13% of the total national production, 26% of the national farming production, and 62% of the livestock sector. Colombia ranks as the 15th largest livestock producer in the world, but the industry's growth has been slow, below the average of the American Continent. This has led to decreased per capita consumption and a shift from beef to poultry.

In Colombia, there are approximately 24.7 million heads of cattle, 57% of which are for beef production, 4% for dairy products and 39% for mixed purposes. About 37.8 hectares of land are used for livestock, with a loading capacity of 0.67 heads per hectare.

Markets and cattle transportation

In Colombia, livestock commercialisation is still carried out very much as it was 200 years ago. Livestock is moved from production areas to regional fairs in the consumption centres, often travelling enormous distances and enduring extremely stressful and painful transport and unloading conditions. The transport system is irrational: a 10-tonne truck can usually only carry a 2,500 kg load for a round trip: the 10 calves transported make up for the allowed load and the trucks are usually empty when they return to the production areas.

Slaughterhouses

The sanitary authorities have 150 registered slaughterhouses for cattle and pigs. Only 27 of these (cold-storage slaughterhouses) possess adequate techniques for the handling of edible and non-edible waste. A high percentage of municipal slaughterhouses do not hold sanitary licences to operate, and mishandle their slaughtering waste, thus becoming permanent sources of contamination and pollution. There are four approved slaughterhouses for equines, but the vast majority of horses are slaughtered in clandestine places.

The main purpose of this report is to compile and review all animal production systems in Colombia. It identifies volumes, areas where the different types of production are concentrated and how these are managed. By making comparisons with the rest of the world, it will help to develop an action plan which will allow us to design protocols to generate and favour farm animal welfare, improving the producers' economy and guaranteeing the consumer good product quality and hygiene.

This report was written after reading similar documents from other countries, and after giving consideration to the fact that Colombia was lacking this type of general approach towards the welfare of farm animals. This effort was performed under the direction of Luis Carlos Sarmiento, the WSPA's General Director for Colombia.

In 2005, several visits to different agricultural and livestock centres (traditional, industrial and alternative) were necessary to the development of this report. Information was gathered from various associations, bibliographic revision, research and consultation over the Internet, as well as interviews with stakeholders across the different production sectors.

1 Colombia: General features

Colombia currently has a total surface area of 2,070,408 km^2, of which 1,141,748 km^2 are land and 928,660 km^2 are maritime waters. To the north, Colombia borders with the territorial waters of Honduras, Jamaica and Haiti; to the east with Venezuela along 2,219 km^2 and with Brazil along 1,645 km^2; to the south with Peru along 1,626 km^2 and with Ecuador along 585 km^2; to the west with the territorial waters of Panama and Costa Rica; and to the north-east with Panama along 266 km^2. It also has a maritime border of 1,300 km with the Pacific Ocean and 1,600 km with the Atlantic Ocean.

Colombia is located in the north-western end of South America, from 66° 50' 54" West Longitude to 70° 01' 23" West Longitude, and from 4° 13' 30" South Latitude to 12° 27' 46" North Latitude, including the maritime territories. It occupies 0.84% of the continental surface – excluding the Antarctic – and is the fourth largest country on the South American Continent.

Demographic features[1]:

Population: 45,593,000
Population density: (inh/km): 35.2
Average age (years): 25.11
Capital City: Bogotá, D.C: 7,500,358 inhabitants
Language: Spanish and indigenous dialects
Illiteracy: 8.7%
Religion: Catholic: 90%
Life expectancy at birth (male): 69.17 years
Life expectancy at birth (female): 75.32 years
Infant mortality: 22.47 for every 1,000 births
Rural population: 25% (2002)
Urban population: 75% (2002)
Percentage of women: 51% (2003)
Percentage of men: 49% (2003)

1.1 Climate

In Colombia, temperature varies mainly with elevation above sea level. The annual fluctuation is very small: differences between the hottest and coldest months are no higher than three degrees Celsius in one given place.

There are four different climatic zones (climatic strata):

The hot zone – the area under 1,000 metres in elevation, with a temperature of over 24°C. It constitutes roughly 80% of the country's total area, and is located mainly on the Pacific and Caribbean coastal plains, along the valleys of the Magdalena and Cauca rivers, and in the Orinoco and Amazon areas.

The temperate zone – ranges between 200 and 1,000 metres, with mean temperatures between 17°C and 24°C. It accounts for 10% of the national territory and covers the slopes of the mountain ranges.

The cold zone – ranges from 2,000 to 3,000 metres, with mean temperature varying from 12 to 17°C. It covers about 8% of the territory, and is located on the high elevations of the mountain ranges. The Moorlands (referred to as "Páramos" in Spanish) – bleak areas over 3,000 metres high, with temperatures below 12°C. They cover approximately 2% of the national territory.

1.2 Topography

Colombia's most characteristic topographical landmark is the mountain range known as the Andes Cordillera. It is located in the central and western regions of the country, covering these areas from north to south on almost their entire length. The Andes are made up of three main mountain chains or ranges, running parallel to one another: the Eastern, Central and Western Ranges. On the Caribbean coast, there is an isolated mountainous formation, referred to as "Sierra Nevada de Santa Martha" (Santa Martha's Snow-Capped Mountain).

To the east of the Eastern Range – whose highest peak is La Sierra Nevada del Cocuy (Cocuy's Snow-Capped Mountain) at around 5,493 metres high, there are several areas of scarcely inhabited low torrid lands, partially explored by oil companies. The meridian portion of this area is covered by rainforests with dense vegetation drained by the Caqueta, Vaupes and Putumayo rivers (the latter forming a natural border with Ecuador and Peru). The northern – and most extensive – part of this area is made up of enormous plains or savannahs known as Los Llanos, and is crossed by the Arauca (a natural border with Venezuela), Meta and Guaviare rivers.

Some high plateaus such as the Cundiboyacense Plateau (Altiplano Cundiboyacense, with an altitude of over 2,438 metres and fertile valleys drained by the country's main rivers) are located between the mountain ranges. The Magdalena River is the most important in the country; it runs towards the north between the Eastern and Central Cordilleras (Mountain Ranges), going through almost the entire country, and flowing into the Caribbean Sea, near the city of Barranquilla, after travelling a distance of about 1,540 kilometres. The Cauca River also follows an important course which serves as a means of transportation and communication; it runs towards the north between the Central and Western mountain ranges, and joins the Magdalena River some 320 km before reaching the Caribbean Sea. The Atrato River runs to the east of the Western Mountain Range, crossing the Pacific rainforest, becoming the main means of transportation for the region, and flowing into the Uraba Gulf in the Caribbean Sea. Other rivers, such as the San Juan and Patia, belong to the Western or Pacific basin.

Colombia's coastline covers about 3,208 kilometres, of which over 1,600 km run along the Caribbean Sea. There are numerous river mouths along the coasts, but there are no natural ports to favour ship crossings.

1.3 Land Use

According to the 2002 National Agricultural Survey[2], the Colombian continental territory covers 114,174,800 hectares, of which 51.86% (59,207,239 hectares) corresponds to non-agricultural land, 3.77% (4,304,407 hectares) belongs to the marginally arable surface of the Natural Parks, and 44.37% (50,663,154 hectares) constitutes land for agriculture and livestock.

The area used for arable purposes is about 7.37% of the whole agricultural surface (3,736,388 hectares), of which 43.29% (1,617,450 hectares) are used for temporary crops and fallow land, 52.66% (1,967,418 hectares) account for permanent crops, and 4.06% (151,511 hectares) is the resting area.

The area used for livestock activity is 74.75% (37,871,188 hectares) of the whole agricultural area. Pastures make up 75.95% (28,763,984 hectares) of this area, while undergrowth and weeds account for 24.05% (9,107,199 hectares). From the above data, we can infer that the livestock surface is ten times larger than the agricultural area.

Forests account for 15.28% (7,740,597 hectares) and natural forests cover 97% (7,508,686 hectares) of this area, while planted forests make up about 3% (231,912 hectares).

The area used for other purposes (such as wasteland, rocky surfaces and water bodies) accounts for 2.6% (1,314,987 hectares).

Chart 1: Land use in Colombia

Colombian continental territory (hectares)	114,174,800
Non-agricultural	59,207,239
Non-colonised forests	44,703,112
Colonised forests	10,599,943
Planted forests	19,524
Wasteland and similar	690,851
Water bodies	2,843,202
Urban and semi-urban	350,407
Marginally arable in natural parks	4, 304,407
Agricultural/Livestock	50,663,154
Agricultural	3,736,388
Temporary crops and fallow land	1,617,455
Permanent crops	1,967,418
Resting	151,511
Livestock	37,871,188
Pastures	28,763,984
Undergrowth and weeds	9,107,199
Forests	7,740,597
Natural	7,508,686
Planted	231,912
Other uses	1,314,987

(Source: ENA-DANE SISAC Project)

1.3.1 National Policy on Biodiversity

According to the Von Humboldt Institute in its document about incentives for conservation[3], Colombia's National Policy on Biodiversity stems from a diagnosis identifying the importance of biological diversity on national development. This document highlights some of the direct benefits of biodiversity (e.g. on agriculture, fishing, aquaculture, lumber production, medicine, handcraft production, livestock, zoobreeding and tourism) and some of its indirect benefits (such as ecosystem productivity, hydrologic cycle regulation, CO_2 fixation and fossil fuel generation). This is a way for the country to acknowledge the importance of its natural resources and the great potential of their rational use for economic development. Decree 2811 from 1974 (the National Code for Renewable Natural Resources) establishes that the State also safeguards preservation and conservation of national areas and resources, and it foresees establishing various categories of protected areas. This initiative is further reaffirmed by Decree 622 from 1977. In situ conservation is guaranteed in this way.

1.4 Main religions

Colombia is an overwhelmingly Roman Catholic country (90%, DANE), although other Christian religions have grown steadily over the past few decades, and close to 4,500,000 Colombians have shifted from Catholicism to Anglicanism, Lutheranism, Mormonism and other religions.

Article 7 of the 1991 Political Constitution of Colombia recognises and protects the ethnical and cultural diversity of the Colombian Nation, and article 19 guarantees freedom of cult. Every human being has the right to freely profess and spread their religion in an individual or collective way. All religious confessions and churches are equally free before the law.

This explains why there are so many different cults and religions in Colombia. However, Catholicism being the leading religion, there are no restrictions for meat consumption except on Lent Fridays and on Good Friday, when red meat is replaced by fish. The Jewish community sacrifice their animals according to the technical requirements set up by the Guadalupe Cold Storage Plant in Bogotá.

1.5 Typical diet

The Colombian diet is characterised by an impressive variety of dishes accompanied by plantain, yucca and potato, depending on the geographical region.[4] Seafood and river food are predominantly eaten on the Atlantic and Pacific coasts, just like non-traditional meats such as morrocoy (Geochelone carbonaria turtle), icotea turtle (Trachemys scripta), armadillo (Cabassous sp), iguana, and iguana and turtle eggs. On the plains (Llanos) and in the Amazon region, some more non-traditional meats (such as chigüiro hydrochaeris hydrocaeris, boa constrictor) and river fish (such as Cachama Colossoma species) are also eaten, and turtle meat is frequently consumed.

According to the FAO[5], the cereal, root, tuber and leguminous groups provide just over 50% of the required energy. At a national level, the sweetener group (sugar and panela – unrefined brown sugar) provide almost 20% of the energy, and the oil and fat group contribute just 9 to 13%. In relation to the average household energy consumption, an estimated 2,223 kcal/person/day are consumed, although this figure is lower in urban areas than in rural areas (2184 vs. 2,995 kcal/person/day).

A national average protein consumption of 55.3 g per person per day was found. It is higher in urban areas (57.1 g/day) than in rural areas (51.9 g/day). Some expected differences were found when analysing the diet composition by quintiles of income: cereal is important for all quintiles of income, representing 30% of the total energy; roots and tubers account for 9 to 15%, and are more important in the lower income quintiles; meat and milk make up a higher percentage in the higher income quintiles.

1.6 Political and social problems

The current Constitution (1991) states that Colombia is a State of Social Rule of Law, organised as a unitary republic in which public power is divided into three branches (executive, legislative and judicial) and some independent entities. The president is elected by popular vote (together with the vice-president) for a four-year period, and acts as the Head of State and government.

For more than fifty years, Colombia has faced an undeclared armed conflict in which leftist and ultra-rightist groups have generated a social and political crisis with major and minor cyclic consequences, a process fed by drug-trafficking.

According to Helen Murphy's article for Bloomberg, figures show that President Alvaro Uribe's government is currently the favourite, after successfully disarming paramilitary rebels during his first three years in office (2002-2005).[6] Uribe increased the number of troops deployed against guerrillas and drug traffickers from 278,796 to 374,125, with the result that homicides dropped 30% and kidnappings declined by 50%, according to the Defence Ministry. About 10,000 members of the United Armed Forces of Colombia, a paramilitary organisation that the government says is involved in drug trafficking, have laid down their arms, reducing the remaining number to 4,000. The Defence Ministry says that officials have also persuaded almost 4,000 rebels from the Revolutionary Armed Forces of Colombia (FARC), the country's biggest anti-government guerrilla organisation, to stop fighting.

President Uribe has been re-elected (the first time in 60 years that a president has been re-elected, thanks to a constitutional amendment that now allows re-election), and his so-called "Democratic Security" policy will continue for four more years, from 2006 to 2010. It is worth mentioning that president Uribe's re-election was backed almost unanimously, when he won the presidential election with a landslide majority of more than 7,300,000 votes, the highest score in Colombian history.

1 DANE (2004)
2 DANE, National Agricultural/Livestock Survey (2002)
3 Alexander Von Humboldt Institute, Bogota, Incentives for conservation and sustainable use of Biodiversity (May 2002)
4 Microsoft Encarta Encyclopedia 2005
5 FAO's Nutritional Profiles by Countries (FAO Rome, June 2001)
6 MURPHY Helen, Colombia's Rich Lure U.S. European Investors as Violence Ebbs (Bloomberg), p.2

2 Agriculture

Colombia's economy is the fourth largest in South America (US $109 billion in 2005) and has expanded by 4.1% in each of the last two years. This growth depends mostly on the oil, coal, coffee and flower sectors, and the government expects this expansion to continue, with the economy growing by 4% in 2004 and 2005.[7]

In its report on the Colombian agricultural and livestock sector, Fedesarrollo (Fundación para la Educación Superior y el Desarrollo) states that the sector accounts for 14% of the GNP – very close to the figure for the industrial sector (15%) and almost three times larger than the mining and construction sectors, each of which accounts for 5%.[8] The bulk of Colombian agricultural and livestock production is made up by agricultural products other than coffee (46%) and livestock products (38%). Both the agricultural and livestock sectors showed great performance between January and September 2004, growing faster than the rest of the economy. Coffee accounts for 13% of this sector's production.

According to estimates from the Ministry of Agriculture[9], the cultivated surface in 2004 reached 4.6 million hectares, 6% more than in 2003. It is worth mentioning that the cultivated area for cotton grew by almost 50% in 2004.

However, it is important to bear in mind that Colombia borders with Brazil, which is currently considered to be the world's grain larder, where the total production cost per acre is US $162, compared to $235 for the United States. USDA estimates show that the profitability margin for soy producers in the Parana state was 51% last year, while Bahia's corn producers had a 44% profit margin and Matto Grosso cotton growers had a 39% margin.[10]

A study on agro-rural competitiveness in Colombia[11], developed by economist Alvaro Balcázar et al. for the World Bank and the FAO, showed that in general terms the largest and most evident competitive advantages stem from perennial crops such as palm trees, plantain and cocoa, and from livestock products such as poultry and high-density temporary products. On the other hand, products like cereals and oleaginous grains are at a disadvantage, and their production is characterised by low labour use.

In Colombia, the agricultural sector accounts for 21% of the national employed population, and constitutes the most intensive labour sector of the economy. But despite a good performance in terms of economic growth, the agricultural, fishing and forestry sector was the only one – apart from the service sector – showing a decrease in employment in 2004. Data from DANE show that it employed 3.7 million people, 85,000 less than the previous year, which represents a 2.3% drop.[12]

7 Murphy Helen, Colombia's Rich Lure U.S. European Investors as Violence Ebbs (Bloomberg 27 Sept 2005)
8 FEDESARROLLO, Tendencia Economica No 36. (March 2005), p. 80
9 Ibid, p. 9
10 Morais, Richard, The Great Brazilian Land Grab (Forbes, 25 July 2005), p. 84
11 AGRO, Proteccion Costosa. En Revista Dinero (30 May 2003), p. 38
12 FEDESARROLLO, Tendencia Economica, Anuario 2004

3 The Colombian pig sector: general features

3.1 Economics of the pig sector

Colombia ranks 49th in the world pork market, with only 0.1% of the global production, and it is the 9th largest pork producer on the American continent, with a 0.7% share. FAO data show China as the main pork producer with a 48% share of global production, followed by the United States and Germany. These three countries have a 61% share of global production.

FAO data show that the sector declined between 1993 and 2003, with a decreasing average rate of -2.8%, as opposed to an average yearly global growth rate of 2.5%, and positive growth recorded in the different economic blocks: the EU (1.4%), NAFTA (2.1%), and MERCOSUR (4.4%).

In 2003, Colombia became the third producer within the CAN, with a 21% share of the Andean Community, after Venezuela (24.4%) and Ecuador (23.8%). Ecuador was the fastest growing country in the group during the same period (3.7%), followed by Bolivia (1.9%) and Peru (0.5%), whereas Venezuela recorded a negative rate (-0.2%).

In the CAN, consumption apparently grew at an annual rate of just 0.1% between 1992 and 2002, which is lower than the world average (2.5%), MERCOSUR (0.8%), NAFTA (1%) and the EU (0.5%). In 2002, Colombian annual pork consumption was less than 2.7 kg/person, well under the world average (15 kg/person) and very far below the EU consumption rate (37.8 kg/person). The economic blocks CAN (4.4 kg/person), MERCOSUR (5.7 kg/p) and NAFTA (25.3 kg/p) have also recorded consumption rates higher than Colombia's.

Data from the FAO and figures from the Agrocadenas Competitiveness Observatory show that during the 1993-2003 period, pork production came to a standstill in Colombia.[13]

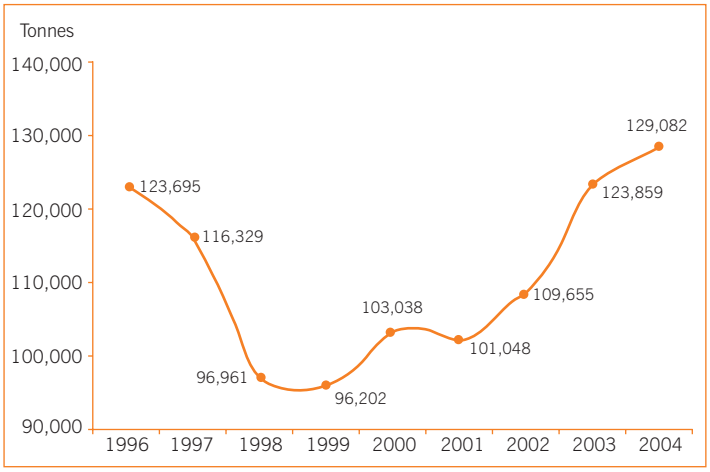
The regional share of pork production is led by Antioquia with 35%, followed by the Distrito Capital (26%), which at the same time are the most important demand areas in the country.[14]

The product is still being sold through an informal market. 81% of producers sell their livestock to middlemen, who usually pay them in cash. Only 10% of the farms sell carcasses in retail cuts or entire carcasses.

Data from the 2003 First Census of the Technical Porcine Activity, carried out by DANE under an agreement with the ACP-FNO, show a total of 1,199 producers who use intensive production methods and 1,518 intensive farms in Colombia, 72% of which are owned by farmers, while 20% are rented. 86% of them use balanced feed from commercial brands and only 14% of them prepare their own mixtures.

In 2002, nearly 3,398 full-time and 483 part-time jobs were generated by the intensive pig industry.[15]

Figure 1- Total national pork production



(Source: Asoporcicultores. National Production 1996-2004)

3.2 Production and consumption

The Colombian Pig Farming Association states that pork production is aimed at the national market, with a small excess demand being covered by imports.

Chart 2- Per-capita pork consumption in Colombia*

Year	National total (kg/inhab)
1997	2.9
1998	2.4
1999	2.3
2000	2.4
2001	2.3
2002	2.5
2003	2.8
2004	2.9

*Refers to pork consumption from legally slaughtered pigs.
(Source: Asoporcicultores: National Fund for Porcicultura)

3.3 The pig industry

The Colombian pig industry does not have major economic significance in comparison with the cattle and poultry industries. Nevertheless, it is a link in the cereal production chain and its importance cannot be overlooked, especially in the central western region of the country, where Antioquia is becoming the main pork producer and consumer.

According to Dinero Magazine in its special edition "5000 Enterprises",[16] the main pork producing companies in Colombia (2004) are:

Chart 3- Main pork producing companies in Colombia (in thousands of Colombian pesos)

Company	Sales	Assets	Net Profit
Tecniagro	89232	148097	6671
Agrisa	52137	38540	1361
Antioqueña Porcinos	39340	26031	460
Pic Colombia	29310	22746	206
Coop Porc Eje Caf	27281	4213	49,2
Porcicola Del Nort	6433	2151	-169

(Source: Dinero Magazine, 10 June 2005)

One of the industry's main features is that it uses high-quality handling standards, which equal or surpass international standards. Some of these companies have their own slaughterhouses and meat-processing plants.

3.3.1 Pig production systems in Colombia

Production systems for pig species are divided into extensive and intensive, which in turn are classified as large, intermediate or small producers.

3.3.1.1 The extensive system

The National Pig Farmers' Federation Manual states that in this system pigs are usually a supplementary activity. The producer lacks the capital and technology characteristic of small and intermediate producers; they do not have adequate levels of technical assistance and do not carry out sanitary or environmental follow-ups, as opposed to most intermediate and large producers.

Free shepherding is common, and the animals are usually confined to rustic and inadequate facilities. Food is heterogeneous and based on crop by-products, waste and dirty water, among other things.

As feed conversion is usually very poor, the fattening period is a long one; the required time to reach a 200 to 220 pound weight ranges from 8 to 18 months, and marketing the animals in urban centres is a difficult process due to the very thick layers of fat they generally develop.[17]

One million pigs are estimated to be raised in backyards and under non-professional production conditions, without suitable sanitary husbandry and lacking adequate nutritional and handling protocols.

3.3.1.2 The semi-intensive system

The Federation manual explains that the main feature of this system is that the animals are not given balanced feed, but for economic reasons the farmer feeds the animals on waste and other low-cost items. Occasionally, the farmer seeks professional advice, and his nutritional plans are successful when he manages to use the required supplements; but at other times he just uses feed that will not allow the animals to develop suitably nourished.[18]

This system has the following characteristics:

- The animals are confined, which makes feeding, handling and shipping to market much easier tasks.
- The animals are given controlled feed with a minimum of concentrate. This is made up mostly of agricultural products and by-products, such as whey, sugar cane bagasse and milling residues. Concentrate is usually administered in two portions: in the morning and in the afternoon, and the supplement is fed after the concentrate.
- The animals are confined within the facilities, which allows them to be taken to market when they are six or seven months old. This type of handling includes sanitary care.
- Constructions are usually low-cost, functional and built using local materials.[19]

3.3.1.3 The intensive system

The intensive system is used in Colombia for almost half of the total pig inventory, following international production standards and trying to maximise resources (capital, space availability, animals, feed). For this reason, it requires using pure breeds or improved genetics, balanced diets (concentrates) by age and animal type (boars, pregnant sows and breastfeeding sows, suckling pigs, growing pigs and finishing pigs), total confinement of the herd, special constructions, stringent sanitary controls both for pig immunisation, cleanliness of the pigsties and of the personnel entering the farm, careful handling of reproduction (controlled mating, farrowing crates, crossbreeding, etc.), and skilled and trained personnel. However, modern technology is only used to its full capacity at limited times, thus allowing the growth of a wide range of handling techniques at pig farms across the country.

3.4 Pig breeds in Colombia

The current trend shows an increasing share of specialised genetic lines, especially PIC and DEKALB.[20] Commercial crossbreeds are also important, while Pietrain, Landrace, Large White and Yorkshire have become less common in current intensive systems.[21]

In Colombia, besides genetically improved breeds, there are also some creole breeds in the extensive system. Some examples are: Zungo Costeño, Casco de Mula, Congo Santandereano and Sampedreño de Colombia. The creole breeds are characterised by their hardiness, with the animals being able to withstand sudden changes in temperature and humidity. They are usually poorly fed, mishandled and kept in deficient sanitary conditions.

3.5 Slaughter weight

Consultations were carried out in several regions of the country for the completion of this report, and some variations were found in slaughter weight. For instance, in the Santander region producers prefer to slaughter the animals at 90 kilograms, in the Bogotá area at 100 kg, and in the Antioquia and Valle regions at between 100 and 110 kg, whereas on the Atlantic Coast the mean slaughter weight is between 70 and 90 kilograms.

According to the FAO database, in 2004 Colombia had a total inventory of 2,310,000 animals, 1,385,000 were slaughtered and 199,000 net metric tonnes of meat were produced.[22]

3.6 Sanitary and vaccination scheme

The ICA strategic plan for sanitary protection includes a series of activities aiming to maintain the animals in good health. These activities range from navel cutting and iron injections to vaccination and periodic sanitary controls. It also recommends that tooth-clipping, tail-cutting and castration should be modified or eliminated due to their traumatic effects on the animals' welfare.[23]

3.7 Nutrition

3.7.1 Feeds used for pigs in the intensive systems

Intensive production systems are based on using concentrated feeds with a high percentage of grains, given to animals kept in partial or total confinement.

Energy Feeds. These make up to 75% of the intake. Corn, wheat bran, and wheat or rice flour, barley, fish oil, fatty acids and animal fat are the most common ones.

Protein-containing feeds. Soy tart is one of the main sources of protein, but meat flour, bone flour, blood and cotton bran tarts are also important protein-containing feeds.[24]

3.7.2 Alternative feeds

In the pig industry, it is possible to use non-traditional raw materials such as yucca, tuberose leguminous, grain leguminous and sugar cane as well as rice crop residues. This helps to reduce the cost of corn and sorghum.

Piedad Cuellar from CIPAV states that it is important to increase the use of these raw materials, due mainly to the steady price increase of traditional raw materials and other production costs, as well as to a decrease in purchasing power. Therefore, she says, it is necessary to plant other species capable of replacing the traditionally imported materials found in balanced feeds.[25]

Some of the most promising nutritional resources suggested in Colombia for the pig industry are by-products from African palm-tree oil extraction. These are feasible biological alternatives, and using African palm fruit for pig feeding provides balanced feed at a much lower cost.[26]

The vast majority of backyard pigs bred in Colombia are fed on organic waste from restaurants and residential neighbourhoods. In his essays on alternative feeding, Argenti states that this resource has been used by small-scale pig producers for a long time, either on its own or in commercial concentrates.[27]

3.8 Legislation

Even though little progress has been made in terms of farm animal welfare legislation, Colombia has modern regulations for starting up pig production, ranging from the use of all resources to waste disposal (liquid as well as solid waste) and gas emanation. All pig producers must have an environmental licence approved by the municipality.[28]

3.8.1 Environmental handling on pig farms

At a national level, there is legislation which producers must follow and which involves environmental practices relating to animal keeping and handling, just as there are rules for the disposal of solid and liquid waste in order to maintain a clean environment.

The procedures include such activities as: saving and using water rationally, collecting rain water, handling solid and liquid pig excrement, handling carcasses, foetuses and placentas, handling solid waste on the farm, and controlling rodents, flies and odours. The above considerations provide a better animal environment, reducing water-air-soil pollution. Health problems are common in non-professional farms, which lack suitable environmental handling. The main problems are: air pollution from foul odours, infestation of rodents and flies, and respiratory problems caused by increased levels of ammonia.

3.9 Potential developments

The genetic importance of some creole breeds such as San Pedreño and Zungo Pelao pigs, which so far have been undervalued and are just known as backyard pigs, is an underestimated resource. Nevertheless, these pigs are adapted to the regional climatic and sanitary conditions, are hardy, and have low nutritional requirements as opposed to highly specialised breeds. All of these features make them a promising species for developing sustainable systems, either as purebred or crossbred with specialised lines.

Local authorities should urgently focus their attention on spreading and recognising the importance of all the efforts carried out by public and private organisations on researching new non-traditional feeding sources produced in the country, which would diversify the supply of protein, energy and fibre sources, to substitute imported raw materials which cause a dependence on international commercial policies, thus weakening the industry's functioning and continuity.

Counting on extensive and adequate land, domestic building materials and feeding sources will facilitate the development of new production technologies to improve farm animal welfare.

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28 LEGISLACIÓN EN PORCICULTURA , www.porcinoscolombia.org/Legislacion

4 The Colombian poultry farming sector: general features

This chapter has been divided into two main sections: broiler chicken farming and layer farming. However, it is important to remember that the Colombian poultry industry has developed using foreign techniques and technologies, in which genetics, constructions, equipment and even a major part of balanced feed supplies are imported, turning us into a "chicken and egg assembling industry". Reliance on external supplies and technologies could put the national industry in a dangerous situation, all the more so as a free trade agreement between Colombia and the United States was approved in 2006 (First Semester 2006).

4.1 Economics of the poultry farming sector

The poultry industry is the fastest growing livestock activity in Colombia, presenting high internal competitiveness and understanding the challenges posed by internationalisation, especially those commercial threats from high productivity nations such as Brazil.

To meet this challenge into the meat sector, some companies like Mac Pollo in Santander and Pollo el Bucanero in el Valle have unified processes ranging from handling grain and concentrate to marketing the final product. In relation to the egg-production segment, Incubadora Santander has made a significant investment in state-of-the-art technology, exhibits a flawless cost management performance, and takes maximum advantage of all the process sub-products, such as hen compost and meat flour made from residues.[29]

According to a report by FENAVI in the 2004 poultry balance statement, this sector grew by 2.67%, a low rate if compared with recent history. However, the explanation lies in the moderate dynamics of the egg production sector (0.1%), a result of decisions made the previous year, when market conditions were not ideal, generating a reduction in encasement and a moderate increase in supply in 2004.[30] On the other hand, chicken production (with a shorter production cycle of around one and a half months) had different results, with a 4.37% growth rate, much higher than the expected national GDP increase (3.5%).

4.2 Inventory

Chart 4 shows the major farms' share in broiler chicken production (62.56%), followed by layer farms (31.93%) and breeding units (5.51%). Population share follows the same order, with 49.27%, 45.03% and 5.70% respectively.

Chart 4 - Number of Colombian farms, warehouses and chickens

System	Number of farms	Share %	Number of warehouses	Share %	Number of chickens on date of survey	Share %
Breeding	166	5.51	3,861	12.60	4,103,653	5.68
Layers	961	31.93	17,600	57.43	32,672,240	45.23
Broiler chickens	1,883	62.56	9,185	29.97	35,456,340	49.09
TOTAL	3,010	100	30,646	100	72,232,233	100

(Source: DANE – 1st National Census on Industrial Poultry Farming – 2002)

Chart 5 - Types of farm and plant ownership in the poultry farming sector

System	Farm and plant ownership		
	Leased	Owned	Other
Broiler chicken	993	673	217
Layer	264	625	72
Breeding	72	82	12
Incubator plants	0	28	2
Processing plants	8	49	5
TOTAL	1,398	1,456	247

(Source: DANE – 1st National Census on Industrial Poultry Farming, 2002)

4.2.1 Number of poultry farms by type of technical assistance provided in Colombia

Chart 6 shows that the most important share of technical assistance provided belongs to farms who hire their own technicians for broiler chickens (61.3%) and breeding animals (83%). When dealing with layers, assistance is shared between owned (33.9%) and commercial (34.3%).

Chart 6 - Types of technical assistance

System	Number of farms	Type of technical assistance				
		Private	Commercial	UMATA*	Own	Other
Broiler chicken	1,883	194	381	5	1,554	149
Layer	961	210	330	8	326	87
Breeding	166	11	3	0	137	14
TOTAL	3,010	415	714	13	1,617	250

(Source: DANE – 1st National Census on Industrial Poultry Farming – 2002)
*Technical assistance provided by the municipality.

Chart 7 - Location of breeding,incubating, broiler, layer farms and processing plants

Department	Breeding & incubating farms	Broilers	Layers	Processing plants
Cundinamarca	38.9%	31.9%	38.7%	29.0%
Santander	30.0%	26.6%	15.3%	12.9%
Valle del Cauca	16.7%	11.9%	15.4%	17.7%
Antioquia	0.60%	6.0%	7.8%	6.5%
Atlantico	2.5%	2.2%	1.7%	3.2%
TOTAL	100%	100%	100%	100%

(Source: XII National Poultry Farming Congress, August 2004.
Extract from "Relocation of Poultry Farms in Free Trade Scenery")

As observed, most of the breeding, incubating, broiler and layer farms and the meat-processing plants in Colombia are located in the Cundinamarca and Santander departments, although the most productive industries are located in Santander.

4.3 The Colombian broiler chicken industry

According to FENAVI statistics, in 2004 chicken production grew by 4.4% more than in 2003, increasing from 678,069 to 707,903 tonnes.[31] At a national level, total chick encasing/housing in 2004 was 423 million units, 1.69% higher than the amount recorded for 2003 (425.9 million units).

The FAO records an inventory of 120 million animals for 2004, and 412 million animals were slaughtered, producing 680,000 metric tonnes of meat.[32]

A report from the Portafolio Newspaper stresses the importance of observing the figures provided by FENAVI, and shows that the average yearly consumption of chicken meat 15 years ago was 7.9 kg, while per capita demand in 2004 was 15.6 kg.[33]

4.3.1 Broiler chickens: production and consumption

According to data from the First National Census on Industrial Poultry Farming, the national share in chicken production is led by the Central Region (Cundinamarca, Tolima and Huila departments) with 35% of the total, followed by El Valle (19%), Santanderes (18%), Antioquia (11%), the Atlantic coast (10%), the coffee-growing axis (3%) and the eastern regions (1%).[34] This production is taken mostly to Bogotá, where it is sold mainly at privately owned sales outlets, supermarkets and specialised restaurants. Consumption patterns are different now: some years ago customers used to buy whole chickens, while nowadays they demand chicken pieces, mostly thighs, legs and wings, usually packed in trays.

According to the Dinero Magazine "5000 Businesses" special issue, the main Colombian broiler chicken industries[35] are:

Chart 8 - Colombian broiler chicken industries

Poultry farm	Sales	Assets	Net profit
Avidesa	255,221	100,252	4,520
Friko	104,766	73,580	451
Dist. Avicolas	99,425	54,573	1,383
Super Pollo Paisa	91,771	30,897	373
Acodensa	82,979	48,636	704
Pollo Andino	68,137	17,700	737

The Colombian broiler chicken industry follows a model of vertical integration, in which there are only a small number of small producers, who have been disappearing due to competition and the high cost of balanced feeds; currently these are just temporary producers, who enter the business only when prices rise significantly or before the Christmas season. At present, this is a highly mechanised and productive industry.

The National Survey on Industrial Poultry Farming shows that most commonly used genetic lines for broiler chickens in Colombia are:

- Ross : 81.60%
- Cobb: 14.39%
- Hubbard : 3,14%
- Arbor Acres: 0.54%
- Lohman Mat: 0.18%
- Other: 0.14%[36]

4.3.2 Slaughter and transportation

Chart 9 - Number of poultry processing plants, by stunning and neck-slicing methods, by department

Department	Number of plants	Stunning method			Neck-slicing method	
		Electrical	Gas	Other	Mechanical	Manual
Antioquia	4	4	0	0	1	3
Cundinamarca	18	13	0	0	4	10
Santander	8	7	0	1	1	7
Valle del Cauca	11	6	0	3	1	9
Other departments	18	14	0	4	3	15
TOTAL	62	45	0	8	11	46

(Source: DANE - 1st National Census on Industrial Poultry Farming – 2002)

Most large businesses have their own slaughterhouses, which allows them a great deal of working autonomy, as well as allowing them to use all the generated waste for the production of entrails flour, recycled for stock feeding.

Contrary to large broiler chicken companies, small and middle-sized poultry farmers do not possess vertical working structures which could provide them with the support services required for marketing the product. Instead, they have to turn to various agents and middlemen throughout the production process, from the day they buy one-day old chicks until they reach the consumer. Farmers buy the animals, a balanced food store provides them with the feed, they hire a veterinarian as a consultant, rent the facilities, and sell the animals in the sheds rather than as meat, because they do not own a slaughterhouse or know how to reach the final customer.

Chart 10 - Average slaughter age of broiler chickens

Department	Breeding
Antioquia	41.73
Atlántico	43.95
Bolívar	44.83
Boyacá	41.00
Caldas	37.43
Cauca	45.70
Córdoba	45.88
Cundinamarca	43.87
Huila	50.93
Magdalena	43.17
Meta	46.11
Nariño	44.67
Norte de Santander	43.69
Quindío	54.50
Risaralda	40.96
Santander	42.34
Sucre	40.15
Tolima	48.46
Valle del Cauca	42.87

(Source: XII National Poultry Farming Congress, August 2004.
Extract from "Relocation of Poultry Farms in Free Trade Scenery")

4.3.3 Sanitary and vaccination plan

The Colombian authorities supervising animal health have produced important documents recommending measures which, although not formal laws, contribute to demand that poultry farmers keep an optimum sanitary status, avoiding diseases which usually occur through lack of hygiene and maintenance. In recent years, the Colombian poultry farming industry has been implementing norms and regulations aimed at preventing some diseases from entering their land, especially on account of the high risks presented by illnesses diagnosed not only in the country, but also abroad, considering the panic currently generated by the H5N1 Avian Influenza (Bird Flu). A clear example of this type of situation is the export problems suffered as a consequence of isolating the H7N1 virus at a poultry farm in the Tolima department.

The ICA, FENAVI and FONAV biosafety manuals explain the regulations to be met by standard Colombian poultry producers, aiming to prevent infectious diseases common to intensive production systems. Some of these regulations recommend avoiding overcrowding, favouring concrete floors, promoting easily

washable materials for equipment, not using entrails or poultry farming waste, rodent and insect control, adequate water treatment, adequate handling of mortality and excrement, a suitably implemented vaccination plan by type and frequency of vaccinations, an adequate and rational use of the facilities, and avoiding housing chickens of different ages together.

4.3.3.1 Chicken vaccination programmes

There are different types of vaccination schemes, and most of the big production units have their own health department to take samples and observe the different levels of antibodies to be enforced according to the existing diseases in the region; others rely on technical assistance provided by laboratories, which also apply the vaccination scheme that they consider adequate.

4.4 The Colombian layer industry

4.4.1 Egg production and consumption

National egg production for 2005 was 8,991 million units, 9.4 million more than in 2004. According to FAO statistics, production is represented by 470,000 metric tonnes of eggs.[37]

An economic investigation developed by Agrocadenas says that despite a marginal share (0.6%), Colombia ranks 28th in global egg production. At the American level, Colombia is the sixth most important egg producer, with a 3% share. From 1993 to 2003 the sector grew by a 0.6% annual average, a rate higher than that of the EU, but well below the global rate (3.6%) and rates in the NAFTA, MERCOSUR and CAN blocks.

Colombia is the main egg producer in the Andean sub-region, with 325,000 metric tonnes in 2003, about 40% of the region's production and twice the production in Peru (23%) and Venezuela (22%). However, it is worth mentioning that those two countries have had faster growth, at 5.2% and 2.9%.

Data provided by the FAO show that, particularly over the last three years (until 2004), Colombia's egg production has recorded high losses in the global context. Although the number of eggs per bird obtained in 2003 is higher (13 kg/bird) than the global number (10.4 kg/bird) and the CAN (12kg/bird) and MERCOSUR (7.5 kg/bird) averages, it is still below the EU (16.6 kg/bird) and the NAFTA (14.3 kg/bird) averages, and is currently dropping, decreasing at an annual rate of 1.28% from 1993 to 2003.[38]

In the early nineties, every Colombian ate 116 eggs per year; this amount increased to 165 eggs per person in 2004. Colombia ranks sixth in egg consumption among 13 American countries. But while a Mexican eats 19 kilograms of egg per year, a Colombian eats just 10.1 kilograms.

The following are selected rankings in global egg consumption: 1. The Seychelles, 2. Holland, 3. Japan, 5. Mexico, 8. the USA, 23. Canada, 29. Uruguay, 35. Paraguay, 64. Brazil, 78. Chile, 81. Colombia, 87. Peru, 88. Venezuela, 99. Ecuador.[39]

In Colombia, egg production is spread among a large number of producers, with levels ranging from 500 to more than 500,000 layers, with the following distribution: Central Region (Cundinamarca, Meta, Tolima y Huila) 35.8%; Santander 24.7%; Valle 21.5%; Atlantic coast 5.1%; Antioquia 9.3%; the coffee-growing axis 4.3%; and the eastern region 1.9%. The past few years have shown a shift towards red egg production (67%), mostly driven by consumer preference.[40]

4.4.2 Housing

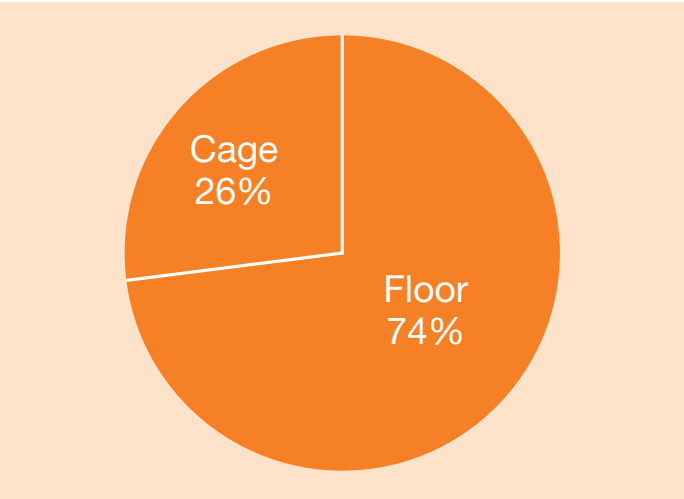
In Colombia, layers are housed in henneries or in cages, with different variations in equipment and systems.

Chart 11 - Number of layer farms by type of facility in the different departments

Department	Number of farms	Floor type		Feeder type			Drinker type		
		Ground	Cage	Roll top	Peck	Other	Flute	Tray	Other
Antioquia	78	172	115	8	170	109	70	40	169
Atlántico	16	71	3	12	59	3	1	46	27
Boyacá	20	42	13	0	35	20	2	16	37
Caldas	23	64	11	5	56	9	14	52	9
Cauca	14	23	17	2	26	12	7	0	33
Córdoba	8	10	3	3	9	0	0	10	2
Cundinamarca	370	256	110	67	470	102	111	277	251
Huila	13	22	8	2	14	14	6	1	23
Meta	24	51	0	2	48	1	4	4	43
Norte de Santander	55	96	19	22	88	3	14	82	17
Quindío	10	11	27	20	7	11	26	11	1
Risaralda	11	2	16	12	0	6	12	0	6
Santander	146	339	76	44	145	58	202	144	183
Sucre	5	8	0	0	8	0	0	4	4
Tolima	15	70	65	1	50	84	3	1	131
Valle del Cauca	148	213	123	52	70	80	60	61	121
Other Departmets	5	25	0	17	8	0	7	17	1
TOTAL	961	1,745	606	269	1,263	512	539	766	1,058

DANE – 1st National Census on Industrial Poultry Farming, 2002)

Figure 2 – Percentage of animals kept in cages vs animals kept on floors in confinement



(Source: DANE – 1st National Census on Industrial Poultry Farming, 2002)

4.4.3 Inventory of layers and breeds found in Colombia

In Colombia, the average cycle of layers is 72 weeks. Birds have an average breeding period of 20 weeks; the laying phase begins around the 18th week and goes on for about 52 to 55 more weeks based on flock productivity and the market price for eggs and spent layers.

In Colombia, once the laying cycle is over, layers are used for human consumption and, according to the region, some of them are taken to illegal slaughterhouses and distributed to market places and restaurants, especially in Casanare and Boyacá where the demand for them is always high. The remainder is used for the cooking flavouring industry (e.g. for broth cubes).

Chart 14 - Inventory of layer breeds

Breed or genetic line	Number of birds found at time of survey	Share %
Hyline Brown	7,877,542	24.11
Lohman White	4,901,419	15.00
Isa Brown	4,795,642	14.68
Lohman Brown	4,445,237	13.61
Asp Brown	2,564,538	7.85
No answer	2,224,298	6.81
Hyline White	2,065,277	6.38
Babcock	1,363,348	4,17
Other	1,179,308	3.61
Hy Hissex	703,579	2.15
Isa White	508,350	1.56
Sex Link	22,066	0.07
Shabr	1,636	0.01
Total	32,672,240	100.00

(Source: DANE – 1st National Census on Industrial Poultry Farming, 2002)

4.4.4 Forced moulting

Although this is not a generalised practice, it is carried out at some farms, when the birds are 12 – 14 months old. This practice also includes other activities, such as discarding, individual beak-trimming and increasing light exposure just before the moulting cycle. There are different methods and combinations of forced moulting, such as withdrawing water, feed or light supplies. The survey shows that these activities are still performed on about 3.55% of birds.

Chart 13 – Total birds, by activity

Breed or genetic line	Number of birds found at time of survey	Share %
Growing	7,600,739	23.26
Egg-laying	23,912,649	73.19
Refeathering	1,158,852	3.55
Total	32,672,240	100.00

(Source: DANE – 1st National Census on Industrial Poultry Farming, 2002)

4.4.5 Artificial lighting

Natural light is used as much as possible, especially considering our location on the equatorial zone. However, there are programmes that partially or totally restrict light to growing chicks and use light stimulation during the production phase, increasing daylight hours to between 15 and 17 hours depending on age and breed.

4.4.6 Beak-trimming

Chicks between 6 and 10 days old are beak-trimmed using a precision beak-trimmer. About half of the beak is cut, both off the upper and lower beak; the process is sometimes repeated when the animal is 10 weeks old. Beak-trimming can also be performed using a hot razor knife (800°C). The final cut is performed when the animal is ten weeks old, levelling the upper and lower beaks, some 5 mm from the nostrils.

4.5 Environmental impact of poultry farming

The development of intensive poultry production systems in Colombia creates a considerable volume of residues which, when inappropriately handled, can generate severe air, land and water pollution, and diseases affecting both animals and human beings caused by pathogen organisms contained in manure. It is also important to consider the high costs associated with the treatment of residues and the high costs resulting from the ecosystem unbalance.[41]

The composition of poultry excrement and the high mortality of birds at the farms can generate a biosafety problem for the business.[42]

Chicken manure (litter or “gallinaza”) is the most important residue due to its characteristics and quantity; it is understood as a mixture of bedding, absorbing moisture and chicken manure; the bedding serves to collect these residues, making it easier to dry and handle them.

The most commonly used bedding materials in Colombia are wood shavings, rice husks and coffee husks.

The manure is piled up in henneries and coops throughout the productive cycle and according to each one of the export types. Once the production period is over, the material is carried out and transported to its final use, generally as fertiliser.

Residue from processing plants is the second major residue and has a negative environmental impact on water sources. Residual waters are made up mainly of blood, fat, feathers, entrails and chicken manure.

Dead animals are considered as the third most important residue within the production cycle. These residues are usually treated within the premises (cesspits, compost, incineration or feed for other animals).

Some other waste, like water used to clean floors (after removal of chicken manure), and all the elements used for vaccinating the

animals (syringes, packs, etc.), are subject to different disposal practices and can have detrimental environmental effects.[43]

The Colombian government has set up environmental policies for the poultry farming sector,[44] and the following measures regarding environmental resources are being planned.

Colombia has an extensive regulating framework. The laws, decrees and resolutions involved directly with the poultry farming industry are:

- Decree 0261 from 1971: The Ministry of Agriculture legislates on the quality of birds for commercial production and on fertile eggs for incubation.
- Law # 83 from 1970: Article 5 of the National Sanitary Code sets norms concerning bird slaughterhouses, eggs for human consumption, air pollution and pollution from waste.
- Decree 3075 from 1997: Applies to all food-processing factories and businesses.
- Decree 2278 from 1982: Current regulations on bird processing.
- Resolution # 02311: Concerned with zoonosis control.
- Resolution # 811 from 1992: Sets up plans for vaccinating birds against diseases such as Marek, New Castle, smallpox and Gumboro disease.

4.6 Potential developments

The fact that almost 74% of poultry farming develops on warehouse floors creates the possibility of developing a production more in line with animal welfare standards, and simple measures such as adjusting density by square metre, adequate handling of nests and beddings and the introduction of perches could dramatically improve the animals' quality of life, also providing better production indexes and better prices for the producer once certification has been obtained.

There is a growing public interest in organic – or ecological – products; this creates an opportunity for the development of small and medium-size meat and poultry producers to reconvert their production and deliver not only a generic product but also a value-added product at a better price.

Being a leading nation in poultry and egg production within the Andean Community of Nations presents production and potential export advantages over the other nations; however, a stronger agricultural capacity (in terms of arable land, machinery, etc.) is needed in order to allow for an autonomous supply of the grains needed at competitive international prices. This can be attained through strategies determined by the competitiveness chain and also with the support of the Ministry of Agriculture.

Despite the overwhelming growth of the industry over the past fifteen years, reflected not only in production volumes but also in domestic poultry and egg consumption, there still exists a potential for internal and external growth, limited by the lack of national production of raw materials at competitive prices, which in turn limits export possibilities because of the usually high prices. Therefore, strategies should be reconsidered, planning an industry adjusted to the country and its climate, different from the current "copycat" model which, despite its efficiency, is still extremely vulnerable.

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38 AGROCADENAS. Capítulo I, Cadena de los Cereales, Alimentos balanceados para animales, avicultura, porcicultura.
39 Periodico Portafolio. Los colombianos cambian sus patrones de consumo. http://www.portafolio.com.co/port_secc_online/porta_econ_online/2005-04-27/ARTICULO-WEB-NOTA_INTERIOR_PORTA-2050673.html
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41 FENAVI – FONAV. Política ambiental para el sector avícola. Bogotá, 2002
42 ALTERNATIVAS VIABLES PARA LA SANITIZACIÓN Y COMPOSTACIÓN DE GALLINAZA Y POLLINAZA. Nodo de producción más limpia. June 2005
43 FENAVI – FONAV. Diagnóstico e impacto ambiental de la avicultura. CINSET. Bogotá D.C., 1998
44 Ibid

5 Raw materials and balanced feeds

According to Agrocadenas, the Colombian poultry farming sector has been characterised as an important sector for the demand of raw materials, both national and imported, for the production of balanced feeds, and some products such as sorghum, soy bean, yellow corn and soy flour, which were imported in considerable amounts during 2003 and 2004.[45]

The total imported amount of these products in the first quarter of 2003 was 1,405,440 tonnes, rising to 1,532,538 tonnes for the same period in 2004 – a 9% increase.

Evolution of the balanced feed sector in Colombia has been centred around feed production for farm animals. Broiler and egg production is carried out exclusively based on these balanced feeds.

Nearly 75% of feeds are produced by a group of companies which in turn sell them to third parties or commercial brands. The remaining 25% are provided by "mixers" or breeding and broiling farmers who manufacture concentrates in order to feed their flocks.[46]

There are several balanced feed producers in Colombia, each with their own specific nutritional programmes for poultry farming. They manufacture products for intensive breeding in the case of broiler chickens, as well as a special line for small farmers. Examples of these manufacturers are Solla S.A., Purina. Italcol, Nutrimax and Finca S.A.

45 ESPINAL Carlos F y Otro. Informe de Cadena de Cereales, Anuario 2004
46 Ibid

6 Cattle farming: general features

In its economic report on the meat chain, Agrocadenas refers to FAO statistics.[47] The global cattle population was 1,401,535,469 in 2002. 14.38% of cattle are in North and Central America, 22.32% in South America, 33.70% in Asia, 10.18% in Europe and 2.79% in Oceania. Colombia has a 1.76% share of the world total, with 24,765,292 heads of cattle.

Brazil takes the largest share of the livestock inventory (56.33%), followed by Argentina (16.12%) and Colombia (8.64%). In Colombia, the cattle farming industry represents about 12.94% of national production.

Colombia is an important beef producer globally,[48] ranked as 15th in 2003, but the industry's growth has been slow, below the average of the American Continent and even behind the Andean Community countries (CAN). As a result, per capita consumption has been decreasing steadily. This drop in consumption is due, among other things, to the fact that beef has been progressively substituted by poultry, which has gained prominence in the Colombian diet, with an increase in productivity and competitiveness and therefore a fall in prices.

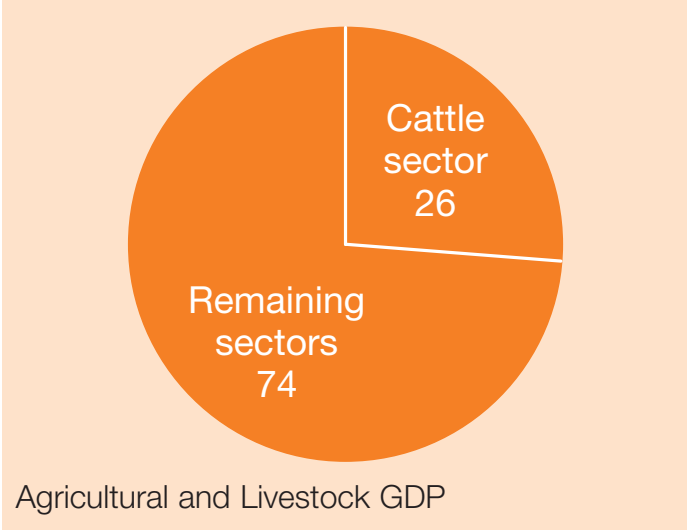
In 2003, the cattle industry (beef and dairy) accounted for 26% of the Colombian agricultural and livestock farming sector, about 62% of the livestock farming sector. Its production value is nearly three times higher than coffee growing in Colombia, and it is higher than the production value of all permanent and temporary crops. In monetary terms it represents the most important product of the national livestock farming sector, and it is 2.2 times higher than the poultry farming sector (poultry and eggs).

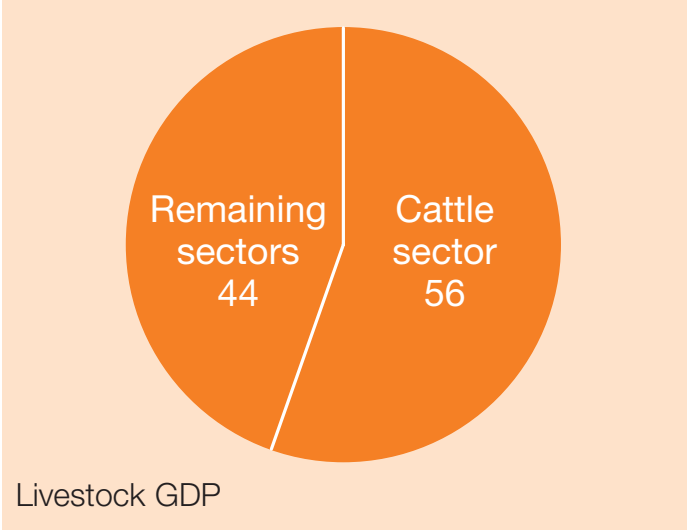
According to the 2002 National Livestock Survey, the cattle population reached 24.7 million heads, 57% of which went to beef production, 4% to dairy products and 39% to both.[49] The cattle industry used 37.8 million hectares, with a loading capacity of 0.64 heads of cattle per hectare, indicating extensive production systems. 64% of the flocks were female and 35% were male. 16% of these were of slaughter age and 39% of the cow population was of reproductive age.

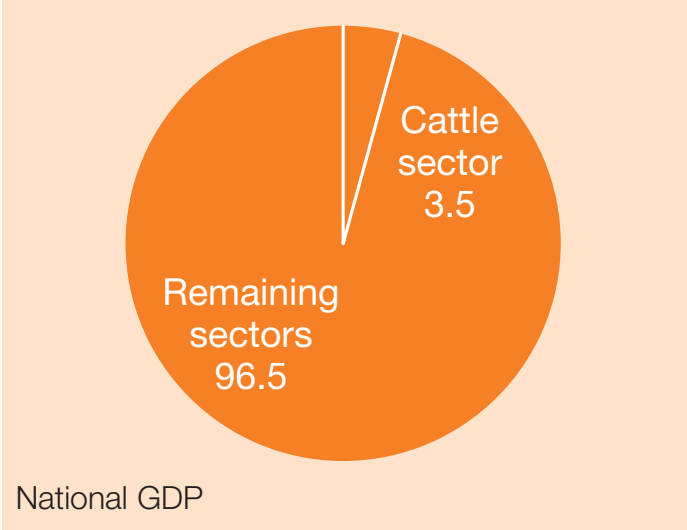
The regions with the highest cattle share are the northern region with 28% and the eastern region with 27%. Although cattle production is present throughout the country, the departments with the largest population are Cordoba, Antioquia, Casnare, Caqueta, Cesar, Santander, Meta and Cundinamarca, where more than 60% of the total is concentrated.

Colombia is an important global cattle producer and ranks among the first eleven producers, with a share close to 2% of the total, according to FAO data. In the Latin American context, only Brazil, Argentina and Mexico are ahead. However, as previously mentioned, the industry's growth in Colombia has been slow, with an annual average rate estimated at -0.02% over the 1990-2003 period.

GDP Share







(Source: The National Cattle Fund 2005)[50]

6.1 Production and consumption

According to Agrocadenas, legal slaughtering of cattle in Colombia has increased by 1% a year over the last decade.[51] In fact, while during the eighties the annual slaughter was of approximately 3.2 million heads of cattle, this figure increased to 3.6 million over the following decade. In 2001, the figure was 3.6 million, showing a fall over the next two years. Finally, the figures for 2003 were 15% lower than the figures for 2000. The annual average growth ratio was 0.4% for the period 1990-2003. The FAO data service shows a total production of 750,000 metric tonnes for 2005, with 3.65 million animals being slaughtered.

ENA data show that the number of cattle slaughtered in 61 municipalities during 2002 decreased by 6.4%, and the average weight also fell by 3.6% when compared with the figures recorded in 2001.[52] For male animals, slaughtering decreased by 0.5% while weight increased by 2.4% from 2001 to 2002. For cows, a huge decrease was shown in both slaughtering (18.8%) and weight (19.1%).

The Meat Chain Report in Colombia shows an apparently moderate increase in cattle consumption between 1991 and 2003, at an annual average rate of just 0.9%.[53] It is worth mentioning that this rate is lower than the population growth rate (calculated at 1.9% per year), which implies a decrease in the national per capita consumption. In fact, there was a drop from 677,290 metric tonnes consumed in 1991 to 767,819 metric tonnes in 1997, and the average has been decreasing ever since, falling to 659,379 metric tonnes in 2003.

As an indicator of livestock productivity, beef yield shows that Colombia is below the world average and also below the main commercial blocks. In 2003, the number of kg/beef obtained was 197 kg/head, while the world average was 104 kg/head. NAFTA countries report yields of 315 kg/head, European countries report a 278 kg/head yield, and the yield for countries on the continent is 257 kg/head. The main producing countries report high yields: 332 kg/head in the United States, 309 kg/head in Germany, and 225 kg/head in Australia. In Latin America, Argentina has a 222 kg/head yield, Brazil has a 216 kg/head yield and Mexico has a 214 kg/head yield. At the CAN level, yields are less than 200 kg, with the exception of Venezuela, which has a 215 kg/head yield. This analysis is reported in the 2004 Yearbook.

Despite this low level, yields showed an increasing trend for the 1990 – 2003 period, with a 0.3% annual rate. This is a low figure, but it is certainly above the world average, which has been dropping by -0.1% every year. The EU has been growing by 0.3%, while the American continent has been growing by 0.7%.

FAO data show that Colombia produced 6.7 million tonnes of whole milk in 2005.

6.1.2 Indicators of production and productivity

Over two thirds of the cattle inventory (68%) fall within the traditional and minimum investment shepherding systems, characterised by an extensive use of land while maintaining low productivity levels. The improved extensive and high-productivity shepherding systems are basically limited to dairy, dual purpose and fattening cattle farms, while breeding activities use the most extensive and low-productivity systems.[54]

In an article for CEGA56 magazine, Jairo Arias says that given the diversity in forms of production, in order to perform an accurate diagnosis of the cattle farming sector it is necessary to classify them as cattle farming businesses; operating as a set of items functioning as a sole entity, following a structure and having related functions aiming at meeting objectives.[55] All of these cattle farming businesses have five basic features which allow that classification: input (raw materials), process, output (product), system feedback and external environment.

The following is an approach to the main characteristics of the cattle farming businesses in Colombia, as defined by Arias and others:

A. The extractive system

Farms are located on plains with very low productivity and a minimum loading capacity: 2 to 10 hectares per head of cattle are required. Consumer goods, including most feeding supplies, must be purchased at distant markets located in a very limited number of developed municipalities.

Activities: The extractive system allows just one activity, namely growing the animals until they reach a suitable weight to take them to the fattening farms located at the foothills or on areas planted with improved pastures on the next high plain. Culled animals – old cows, bulls and some young bulls – are sold for slaughter with weights well under the average for other systems and at a much older age. The prices and yields of these products are much lower than the national average, due to their poor quality. This system, which exhausts land and water resources without reinvesting to protect them, causes prejudice to the economy. To a certain extent, its misuse of land and low production are responsible for the low national averages. For example, using the land for forest plantation would be more profitable for the country.

B. The traditional extensive shepherding system

In this type of system, soils are covered with low-productivity natural grasslands or with planted grass. Investment other than in cattle itself is usually very low and limited to fencing lands, and building a house and a barnyard where cattle are worked and cows are milked. In the traditional extensive shepherding system, nutrition is based mainly on free shepherding (whose productivity depends solely on the soil quality), on natural grass or on non-native pastures without adequate fertilisation or care.

Activities: Contrary to the extractive system, which allows only one type of cattle farming activity, the extensive system offers several possibilities, in accordance with the market location, the soil quality and the producer's goal.

C. The improved extensive shepherding system

Animals are fed through shepherding, based on improved grass species, usually associated with native leguminous and sometimes with imported varieties. In the dual purpose system, fattening animals and milking cows are given supplements, while at specialised dairies cows are given small amounts of balanced feeds. Unlike in the merely extractive system, there are some cultural practices such as annual control of weeds and selective fertilisation of the best areas on the farm.

Activities: The predominant activities developed in this type of improved extensive shepherding system are breeding, dual purpose, complete cycle, specialised milk and fattening activities.

Due to the appearance of three new activities, this system bears important differences with the previous ones. These activities are: dual purpose, fattening in hot regions, and specialised dairy in cold regions. Similarly, breeding disappears as a specific activity, because its characteristics are not compatible with the high productivity level of the system.

D. The supplemented intensive shepherding system

Introducing feeding supplements to shorten fattening time and increase milk production is perhaps the basic characteristic of this system. Pasture handling includes irrigation, intensive fertilisation and a stringent control of weeds, both in pastures and forages.

Activities: This system avoids the complete cycle activity because of the lack of extensive land necessary to develop this activity.

E. The confining system

Feed for animals stabled for fattening is made up of crop sub-products and to a lesser extent of balanced feeds; milk-producing cows in confinement are fed with chopped forage and concentrates, sometimes supplemented with chicken manure (litter) or crop by-products. These activities can then be carried out without using other areas in addition to the stables; in practice, most of them function inside an agricultural business located on the outskirts of large or medium-sized urban centres. This is usually the case with the intensive supplemented shepherding system.

The confinement system is frequently located inside large agricultural businesses, which usually have large facilities initially built for different purposes, state-of-the-art machinery and equipment mostly used in agriculture but occasionally used in the livestock business.

Characteristics of the productive system:

This system's main characteristic is the complete stabling of all the animals in facilities especially built to fulfil that purpose or inside rearranged facilities. In some cases, the animals have access to a small area for exercising or resting.

The confined system is still in its early stages, and it is only used in a very limited number of places; diets provided to the animals are almost as numerous as the farms using the system.

6.2 Main breeds

Cattle was introduced in Colombia at the time of the Conquest,[56] initially with breeds native to the Iberian peninsula which adapted to our tropical conditions and evolved according to the climatic and topographic conditions of the region. Eight of these breeds can now be characterised as Colombian; some examples are: Blanco Orejinegro, Hartón del Valle, Costeño con Cuernos, Romosinuano, Sanmartinero, Chino Santandereano and Criollo Caqueteño.

In the same way, Lucerna and Velásquez are two breeds developed in the last century and now considered to be Colombian breeds. They are the result of multiple crossbreeds between imported and creole cattle, but they are now characterised as breeds.

At the commercial level, breeds in Colombia change according to the production systems. The intensive systems tend to use pure breeds, either beef, dairy or dual purpose. In the Sabana de Bogotá, the Cundiboyacense high plains and some other areas of high dairy productivity, there are nuclei of Holstein Friesian, and you can also find flocks of Normand and Brown Swiss, as well as some crossbreds among them. There are some small flocks of Simmental, Jersey, Guernsey and Red Poll.

In the beef production system the predominant breeds are Zebus, crossbreds with creole and introduced cattle of the Taurus type.

6.3 Marketing system

In his article "Cattle and Cattle Beef Marketing in Colombia", J. M. Ospina describes the different systems with much precision, according to the current situation.[57] One of the most frequently mentioned is the commercialisation of livestock, which in Colombia is carried out in a way similar to that used 200 years ago. Its main characteristic is movement of livestock from the production areas to regional fairs in the consumption centres, often travelling enormous distances. This has forced the producer to avoid attending the direct marketing process, giving rise to an important number of middlemen, among which we can name salesmen on commission who receive the cattle at the fair for their marketing on a commission basis. Next, we have another type of agent or salesman on commission, whose job is to try to place different numbers of cattle to be sold to retailers. It is also possible to find wholesalers for carcass meat. Finally, there is the small neighbourhood butcher who buys from one of the agents and assumes all the expenses for having the livestock in the fair until it is slaughtered. The main costs of production related to this system are:

- Transportation: The system used is irrational. A 10-tonne truck can only carry a 2,500 kg useful load to the fair - just 10 calves - and will return to the production area empty, because there is no compensation load available.

- Losses: Barnyarding and transporting the cattle means tiring the animals out due to movement, nervousness and lack of food. This loss amounts to 8%.

- Uncertainty: Once the cattle gets to the fair, price formation is uncertain and volatile, depending on circumstantial events, such as road closures, trucks breaking down, or buyer attendance in the meeting place. Animals lose an additional 4 to 8% of bodyweight as a consequence of these events.

The inefficiency and the high private and social costs linked to our commercialisation system are reflected in the fact that the different costs and losses involved in the process of transporting cattle from the farm to the slaughterhouse amount to about 25% of the price of cattle at slaughter.

6.3.1 The product: characteristics

Currently, the price of beef is fixed based on the livestock price. However, this is not a very convenient approach to ascertain quality and obtain good prices, because it is completely impossible to identify the characteristics that define beef quality.[58] Modern cold storages pay producers according to carcass yield rather than the animal's external appearance. The main achievement of this carcass and beef classification system is that classification starts at the selling level, which allows differential pricing according to the category resulting from carcass classification.

When classifying commercial beef cuts according to their tenderness, the Colombian system of cuts corresponds to individual muscles or muscle groups which have different names in different areas of the country.[59] Usually, before these cuts are made, the beef carcass is divided into two wrongly-named "quarters" resulting from a cut made between the fifth and sixth ribs, leaving a back quarter slightly larger than the front one.

6.4 Slaughter and processing

In his document on slaughterhouse waste, Luis Alberto Falla writes that there are 150 slaughterhouses currently licensed by the sanitary authorities for slaughtering cattle and pigs, but only 27 of them (cold rooms) possess the adequate techniques for handling edible and non-edible waste.[60] The remaining slaughterhouses process part of that waste and the remnants are marketed to the so-called sub-product processing plants, who somehow transform it. There are seven sub-product processing plants legally recognised by the sanitary authorities. These businesses usually process edible waste for the production of meat flours.

It is worth mentioning that a high percentage of municipal slaughterhouses do not possess a functioning sanitary licence and do not handle waste adequately, thus becoming dangerous sources of environmental pollution.

There are four licensed equine slaughterhouses, but a large proportion of horses are slaughtered at clandestine locations.

Sanitary regulations for Colombian slaughterhouses are compiled in law 09 from 1979 and decrees 2278 from 1982 and 1036 from 1991, issued by the Ministry of Public Health.

Decree 2278 from 1972 regulates every aspect of the animal slaughtering process and establishes rules for handling, inspecting and slaughtering animals. Some of those rules provide the variables to determine if the animals must be admitted under normal conditions, under special supervision and control procedures, or whether they have to be rejected.

6.4.1 Main handling problems at Colombian slaughterhouses

A study carried out by the Italian firm Tecno Star Due found that when the quality and efficiency of equipment at Colombian slaughterhouses are compared to European standards, there are several technical anomalies,[61] such as:

- Insufficient bleeding: The median is 2.5 to 3 minutes per head, against the 6 to 8 minutes required for an optimum bleeding. At the premises visited by the technicians the animal is killed while it is still restricted, posing evident safety problems for the personnel in charge of the operation. An insufficiently bled bovine affects beef quality.

- Insufficient pithing: This also causes quality problems, both for the beef and for the skin. This problem is often caused by the unusually high hourly production of slaughtered heads, which is incompatible with the available equipment and the real potential of the slaughtering chain at work. Slaughtering chains, except in some rare cases, do not have a linear production organisation, and therefore do not allow strict observance of sanitary rules.

During the slaughtering phases, the carcass is not handled correctly, which can contaminate places and animals even further.

6.4.2 Use of slaughterhouse by-products for feeding

In his document on slaughterhouse waste in Colombia, Humberto Falla writes about the different techniques for the processing and utilisation of edible slaughterhouse waste used in different countries with positive results.[62] The main slaughterhouses process their own waste, while others sell most of their waste to by-product processing plants or just dump it into rivers and streams.

Waste-processing techniques at Colombian slaughterhouses range from old-fashioned to modern industrial processing systems.

Products from processed edible by-products are used for manufacturing balanced animal feeds and are introduced into the different feeding diets, following balancing patterns previously set by each producer and according to the bromatological composition of each individual product.

Chart 14 – Summary of utilisation of slaughterhouse waste by-products for industrial preparation of animal feed

Product	Use
Blood, meat and bone flour	Fattening pigs and broiler chickens
Meat and feather mixed flour	Layers, fattening pigs and broiler chickens
Industrial oils	Energy supplement
Burned and steamed bones	Mineral supplement
Fish flour	Broiler chickens

(Source: Colproas)

6.5 Environmental impacts of the livestock industry

It is obvious that all intensive animal production activities generate an environmental imbalance, with severe negative consequences for soil, water, air and therefore humans. At the bovine farming level we can also name soil degradation as a consequence of animals stamping on it; in poultry and pig farming, the main impacts are the pollution of water sources, gas emissions, and extensive mechanisation to generate grains to feed these industries, which are causing potential risks to the environment.

Enrique Murgueitio of the CIPAV Foundation (cited in the document on incentives for conservation) writes that the main impacts of the Colombian livestock industry are the following:

- Cutting down and burning forests
- Livestock route openings
- Destruction of stream banks, wetlands and natural watering sites
- Forage mono-cultivation
- Fires
- Physical control of the vegetal succession
- Installing, maintaining and repairing stalls and corrals
- Soil stamped on by animals
- Cross paths and cattle paths
- Chemical fertilisation
- Applying pesticides
- Non-biodegradable packaging
- Drugs and medicines
- Land transportation of livestock
- River transportation of livestock
- Dairy processing plants
- Leather processing industries[63]

6.6 Potential developments

Current export markets are looking for added-value products, especially certified organic meats and/or dairy products, which opens immense possibilities for the Colombian production sector, bearing countless advantages when we consider that our production system is based on shepherding, which would facilitate the development of sustainable systems, under adequate scientific, technical and commercial supervision and assessment.

The fact that a vast expanse of the country has been declared free of foot-and-mouth disease through vaccination forces us to think about eradicating other diseases, especially in breeding areas, which otherwise could affect export markets and could also turn into potential threats to animals and humans.

Developing alternative production methods, based on shepherding systems at different levels, which could provide the animals not only with forage, but also with leguminous shrubs and different types of trees, allowing proper technical assistance, a better use of land, a better nutritional composition of feeds and methods of reducing soil erosion.

It is important to focus on the study and use of creole (native) genetic resources, such as the romosinuano and the orejinegro cattle breeds, which are already adapted to the tropical conditions and show toughness, resilience and resistance to diseases, and can also offer great production levels when duly selected.

The current tracking systems must be correctly implemented to guarantee a healthy and safe product for the consumers.

It is necessary to enforce the systems for transporting and slaughtering cattle in Colombia, taking into account the fact that the farmers' efforts to improve their flocks' conditions are useless if the animals are not properly transported to the slaughterhouse and even more so if they are slaughtered under inhumane conditions. These two key points not only affect the products' quality but can also become key contaminating factors.

47 VARIOS, Agrocadenas, La Cadena de la Carne Bovina, generalidades en http://www.agrocadenas.gov.co
48 Ibid
49 DANE, Encuesta Nacional Agropecuaria 2002
50 http://portal.fedegan.org.co:7782/portal/page?_pageid=93,574335&_dad=portal&_schema=PORTAL
51 VARIOS, Agrocadenas, La Cadena de la Carne Bovina, generalidades http://www.agrocadenas.gov.co
52 DANE, Encuesta Nacional Agropercuaria 2002
53 AGROCADENAS, Anuario 2004, p. 869
54 ARIAS, Jairo. Et al. Sistemas de producción bovina en Colombia. En: Coyuntura Colombiana, Bogotá: Vol. XIII, n 2B. p 245 – 266
55 Ibid
56 MARTINEZ Correal, Germán. Censo y Caracterización de los Sistemas de Producción del Ganado Criollo Colombiano, Bogotá, 23 September 1999
57 Ospina Restrepo Juan Manuel, El Cebú No. 281 Dic. - Enero 1.995, p.32
58 AMADOR Gómez Ignacio y PALACIOS Gómez Alejandro, Carta Ganadera, No. 280 1995 p.43
59 GARAY Claudia Cristina y SANCHEZ López Guillermo, Sistema Colombiano de cortes. El Cebú, No.282 1.995 p.33
60 Falla Cabrera Luis Humberto, Frigorífico Guadalupe S.A. Desechos de Matadero como alimento animal en Colombia
61 Delgado Héctor, Estudio Técnico Económico Central de Sacrificio y Frigorífico de Santander
62 Falla Cabrera Luis Humberto, Frigorífico Guadalupe S.A. Desechos de Matadero como alimento animal en Colombia
63 Ibid

7 Exploitation of wild species in Colombia

A report by Baptista Ballera et al. for the Von Humboldt Institute says that the economic value of biodiversity is reflected in the importance of the fauna as a generator of income and national wealth, and by the social importance it has for many different human groups who use it directly.[64] But despite those and many other important values, the fauna is being ignored in the Colombian developmental model and is usually treated as an anachronism and a marginal subject.

The same document cites some of the species with an utmost nutritional and economic importance in Colombia. Some of them are: the chigüiro (Hydrochaeris hydrochaeris), the boruga (Agouti paca), the ñeque or picure (Dasyprocta spp.) and wild pigs (Tajassu spp). Many native populations hunt birds and tropical mammals as a means of subsistence.

While the local peasant or indigenous communities utilise biodiversity as a means of consumption and consider biodiversity as a key element for their cultures' survival, world markets require the wild fauna to satisfy a more superficial and less important demand; for example the fashion industry, which uses exotic leather and furs, or the need for exotic pets, creating a demand for tarantulas, reptiles, amphibious, and snakes – among others – to satisfy people's whims.

According to the report by Baptista Ballera et al., the current legal market for such products is based on the production of only nine species, being carried out at 81 authorised breeding locations and 21 marketing companies.[65] Those nine species are: lobo pollero - chicken wolf – (Tupinambis nigropunctatus), iguana (iguana iguana), babilla (Caiman crocodylus), caiman llanero – alligator of the plains – (Crocodylus intermedius), chigüiro (Hudrochaeris hydrochaeris), boa (Boa Constrictor), guagua (Agouti paca) and Ñeque (Dasyprocta fuliginosa).

64 La Fauna Silvestre Colombiana: una historia económica y social de un proceso de marginalización. Luis Guillermo Baptista Ballera y Otros, Documento Instituto Von Humboldt, 2002.

65 Ibid

8 Animal welfare: current situation

Law 84 from 1989 adopts the national statute for the protection of animals, aimed at preventing and favouring animal health and punishing mistreatment; nonetheless, this law is insufficient and short-sighted, as it misses several other types of mistreatment, such as bullfighting, and the penalties and fines it sets are derisory. Similarly, Law 576 from 2000 regulates Veterinary Medicine as a profession and determines the ethical and legal responsibilities of the sector's professionals.

8.1 Pig farming

In Colombia, intensive production systems do not consider type of cage or barnyard improvement; barnyard floors are usually cemented with grooves and cage floors are usually made of wire mesh or rubber; however, the deep bedding system is being promoted as a cleaner alternative favouring the animals' hooves. This is also an environment-friendly and water-saving system, but even though small and middle-sized producers have adopted it, they complain because (as stated in an interview by Dr. Joaquín Gómez Celis, technical advisor for pork producers) the operator wastes too much time when he has to replace the humid bedding and therefore considers it an uneconomical system.

8.1.2 Welfare problems in breeding sows

Breeding sows are kept in gestation cages throughout their adult lives; these cages have metal bars and are so narrow that the animals cannot turn around. These caged sows cannot exercise and social interaction for them is nil, therefore they cannot develop natural behaviours such as digging for roots or building a nest. The consequence is that they suffer from physical ailments and high levels of stress. They also frequently suffer from wounds and swollen joints, infections, reproductive problems, apathy and abnormal behaviour caused by their frustration.

The sows are moved to farrowing crates a week before the end of gestation, and they experience difficulties when trying to move. They cannot follow those instincts that move them to build a nest before labour, and they cannot have access to their piglets once they are born.

8.1.3 Welfare problems in weaning piglets

The main inadequate practice in terms of animal welfare is extremely fast and sudden weaning, and piglets are usually crowded inside the pen; very often they bite each other's tails. Most of them then have their tails cut off and their canines clipped to avoid more injuries. Another problem they have to undergo is the sudden change in their diet – which causes diarrhoea and loss of maternal contact, leading to adaptation problems.

8.1.4 Welfare problems in fattening pigs

So-called fattening pigs (bred for consumption) are also confined and undergo intensive breeding in overcrowded pens, and are victims of abnormally high stress as a consequence of limited vital space. Afterwards, their teeth (canines) are clipped, their tails are docked, and they are castrated - procedures which are carried out without anaesthetic. All of these practices go against the animals' welfare.

We also find other problems such as overcrowding, tail-, flank- and ear-biting; there are also high ammonia levels, causing the pigs respiratory problems.

8.1.5 Welfare problems in extensive breeding

- Feeding: In this type of exploitation, the animals' diet is insufficient for the physiological and nutritional requirements of a normal development; these diets are mostly based on carbohydrates and fats and are sometimes rotten, as some animal feeds are just made up of household/restaurant waste.

- Health issues: Some of the visited farms lack a proper sanitary plan, causing severe effects on the animals' health. This production model has a high percentage of mortality due to the farmers' refusal to follow vaccination and vermicidal plans.

Several violations of animal welfare were detected at the visited farms; castration practices leading to excessive pain were observed in intensive systems, causing high stress levels to the animals.

8.2 Poultry farming

Adopting the intensive system for poultry production has reduced the levels of comfort for birds in terms of housing, feeding, transport, health and sanitary conditions, and slaughtering; the goal has been to improve yields regardless of the violations of the fundamentals of animal welfare.

With small farmers, all parameters of animal welfare are overlooked – usually through lack of knowledge, and in the case of large producers implementing animal welfare schemes would increase costs.

24% of the total of layers fall into the caging system; none of the visited poultry farms met the minimum requirements to provide and guarantee comfort to the birds.

Beak-trimming, which is carried out in the layer system, and forced moulting – in about 4% of the national production – violate the principles related to freedom, hunger, fear and pain. Overpopulation (overcrowding), unnatural social groupings, confinement, unproductive environment, mutilations, selective breeding and feeding and nutritional restrictions are the causes of most of the problems faced by poultry farming in Colombia.

The environmental impact of intensive production systems depletes water, air and soil resources, thus contributing to habitat loss for wild fauna and biodiversity.

A six-month follow-up was carried out at the Campollo processing plant in the municipality of Rionegro (Santander); chart 17 shows the main injuries found in chickens later slaughtered.

Chart 17 – Findings on chicken mortality and mistreatment

	Dec	Jan	Feb	March	April	May
Birds	1,177,731	1,026,866	895,757	890,326	767,175	826,191
Mortality	0.5%	0.6%	0.5%	0.2%	0.7%	0.5%
Culling - Livers	0.7%	0.8%	2.1%	1.1%	0.9%	1.5%
Culling - Legs	1.5%	1.0%	1.9%	1.5%	1.4%	1.6%
Culling - Necks	0.025%	0.01%	0.1%	0.1%	0.07%	0.1%
Hematoma. Traum.	30%	23%	19%	18%	10%	9.3%
Fractures	25%	10%	1.0%	2.1%	0.5%	0.3%
Scratches	35%	12%	14%	2.3%	4%	5.6%

(Source: Campollo Processing Plant, Santander department)

There are 62 chicken slaughtering plants in Colombia. Forty-five of these use electrical stunning, and the remaining plants use methods not described here. Forty-six plants use manual neck-slicing, and only 11 use mechanical procedures. In some instances, the animals are not properly stunned, or they recover consciousness while bleeding, experiencing extreme pain and suffering.

8.3 Cattle farming

Welfare problems in Colombia vary according to the production systems and the region, as practices vary with local idiosyncrasies. However, the following are considered common denominators:

- Handling: With the exception of dairy cattle farms, extensive cattle farms allow old and savage practices such as cattle branding with a hot iron, dehorning calves, and castrating calves (usually with a razor blade and without anaesthetic). Similarly, animals are violently handled by cowboys who use leather whips to hit and scare them. These practices are ancestral and traditional. Cattle farming generally passes from father to son, from one generation to the next, but socio-cultural and economical phenomena have brought about changes such as moving cattle farms to areas closer to the urban centres and intensification of processes.

- Nutrition: Since bovine nutrition in Colombia depends mostly on pastures, which have a different type of handling according to the farm and to the region, nutrition is a factor bearing high variability; however, in the plains and in extensive areas the animals are forced to consume low-quality, low-palatability forage. They are only nurtured as required for an optimum status on very limited occasions and on very limited occasions are nurtured as required for an optimum status. This situation is observed particularly during the dry seasons, during which hundreds of animals die from malnutrition.

- Transport: Except for a few cases, such as Frigo Medio at La Dorada and Coassar (Fondo Ganadero de Santander) at Aguachica (Cesar), slaughterhouses are located in the consumption centres, which is why the animals have to travel on unpaved roads and then on main roads to the consumption centres. Usually these animals are transported on wooden-bodied trucks with a 10- or 12-unit capacity, but in most cases this capacity is exceeded by as much as 20%. Despite the fact that Law 84 from 1989 regulates transport conditions, it is not always followed, and drivers try to stop as little as possible.

- Slaughter: Except for a few duly licensed slaughterhouses, most slaughterhouses do not meet minimum welfare conditions, and animals are transported to slaughter using violent methods, and inhumane methods (e.g. neck slicing) are used for the actual slaughtering process, especially at slaughterhouses in small towns.

9 Livestock production: improvements and progress

9.1 Dairy cattle

All the different parties involved in dairy cattle farming have been developing an observatory to manage total quality of all the resources, as a means to deliver and provide safety to all people while at the same time guaranteeing animal welfare and health; in the same way they are looking for a transparent marketing system. For this reason they are trying to implement an integral plan of quality certification, focusing both on the national and the international markets and aiming at protecting the consumer.

9.2 Beef cattle farming

The National Federation of Livestock Farmers has developed the Regional Centres for Livestock Services throughout the country, aiming to offer training, technical support and advice to all those involved in the industry. It provides them with the tools required to build up a business, an enterprise around their farm, with a sustainable and competitive focus, and training on subjects such as Fundamentals of Business Administration and Management, Information Management, Specific Technologies, Continuous Improvement, Team Work, Environmental Management, Team Work Planning and Life Project.

9.3 The national cold storage network

In association with livestock farmers from all over the country, Fedegan is modernising infrastructure at slaughterhouses, and towards this aim it has created what has been labelled the National Cold Storage Network, located in the country's main cattle breeding zones. These cold rooms have been built following the most modern technical specifications and have been equipped with state-of-the-art technology. This modern technology is also fundamental for transforming the obsolete marketing system, thus contributing to the implementation of a tracking system by cattle farmers. All of these plants have adopted the HACCP system for a proper process control, within an environment-friendly framework.[66]

FEDEGAN has majority participation in the following slaughterhouses:

- Frigosabanas (corozal – sucre)
- Frigosinu (monteria – cordoba)
- Frigoriente (villavicencio – meta)
- Frigomedio (la dorada – caldas)
- Fricolsa (la pintada – antioquia)
- Frigonorte (cucuta – norte de santander)

9.4 Broiler and layer farming

The National Federation of Poultry Farmers is currently implementing a campaign aimed at demonstrating to the consumers that poultry produced in Colombia is hormone-free. To this end they have developed a series of technical and advertising documents to demonstrate that our poultry is a healthy meat, risk-free for human consumption and for human health, that hormones are not given to these animals, and that our poultry farmers use natural feeds based on corn, soy and sorghum within a biosafety framework.

FENAVI is carrying out strong activities in relation to layers, especially in relation to good handling practices, and has developed a complete guide for the implementation of all these measures, based on international rules adopted in Colombia by Decree 3075 from 23 December 1997, and aimed at having innocuous and safety feeds, forcing farmers to improve their production processes, avoiding practices which violate animal welfare.

9.5 Pig farming

The National Federation of Porcine Farmers is developing several fronts for research and development, aimed at developing alternative pig businesses; the associates have been receiving training on environmental and quality management, providing a range of technological, economically viable and environmentally sustainable tools, also looking for alternative markets with better prices, and guaranteeing high-quality products for the final consumer. In their monthly magazine "Porcicultura Colombiana", they have been publishing articles on animal welfare provided by the WSPA.

66 http://portal.fedegan.org.co:7782/portal/page?_pageid=93,136296&_dad=portal&_schema=PORTAL

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The WSPA is recognised by the United Nations and works to raise the standards of animal welfare throughout the world.

As the world's leading international federation of animal welfare organisations, the WSPA develops campaigns and projects in partnership with more than 800 member societies in over 140 countries.

Through its campaigns, education, training, and animal rescue initiatives, the WSPA seeks to ensure that the principles of animal welfare are universally understood and respected, and protected by effectively enforced legislation.

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