

Development of Livestock Sector in Asia: An Analysis of Present Situation of Livestock Sector and Its Importance for Future Development

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Abstract

This study reports the results of survey conducted on livestock development in selected Asian countries. Livestock plays a vital role in economic development and play a major role in the life of farmers in developing Asian countries. In the Asian region, livestock provides major additional contribution to agriculture through draft power, manure, fuel, and as a fertilizer. Animal products such as meat, milk and eggs provide daily cash income to agricultural families and also provide much required nutrition to rural population. The outlook for the poultry farming is promising. The average consumption of animal products among these countries is well below the world average but with the growth in disposable income and purchasing power will increase the demand for animal products.

This study found that the Asian share of the world meat production has been quite low when compared to its animal population. According to our survey, there is a characteristic reduction of farm families raising cattle and pigs. However, the farm families raising poultry is increasing in developing countries but with large scale poultry farming becoming more profitable in developed and industrialized countries resulting reduction of farm families raising poultry. Along with a wide variety of religious followings, cultures, with different food habits, the livestock industry in Asia has been trying to satisfy variety of consumers in the region. Since feed cost is becoming the most important factor in livestock production, increasing self sufficiency in feed production will be an important factor in future development programs. Demand for animal products has been increasing with the rapid economic development in Asia.

Introduction

Livestock production plays a major role in the life of farmers in developing countries. It provides food, income, employment and many other contributions to rural development. This region is vast in land, water, and vast amount of livestock and poultry population. With economies in many Asian countries growing at annual rates greater than 5-6% and a market potential of 2.8 billion people, the livestock and poultry industry growing faster than ever. Within the agriculture sector, livestock sub sector plays a vital role in economic development. But despite the increasing contribution of the livestock sector, which includes poultry sector, it has not yet achieved the level needed to provide sufficient meat for the growing population.

Increasing per capita expenditure on quality food products and growing demand for livestock and poultry products are characteristic and this region is full of surprises and business opportunities. Asia has been in the news for past several years because of dramatic currency devaluation and stock market declines in the area. This has affected not only the international trade of livestock products but also the local livestock industries which depends on imported feed materials and other inputs. However, once these severely affected countries get on the road to economic recovery and income increase, there will be fastest growth in livestock and poultry production as well as consumption in these countries.

This article elaborates the present situation and the importance of livestock sector in Asian countries, trend in meat production and consumption. Data and other information used in this study are from previous surveys on meat production, consumption, and marketing conducted by the authors and other secondary sources.

Role of Livestock Sector in Asian Agriculture and Social Life

Livestock plays a vital role in economic development particularly as societies evolve from subsistence agriculture into cash based economies. In the Asian region, livestock provides major additional contribution to

Development of Livestock Sector in Asia

agriculture through draft power, manure, fuel and as a fertilizer, animal products such as meat, milk eggs while poultry provide daily cash income and much required nutrition to rural population. Figure 1 summarizes the importance of different types of livestock in daily life of livestock farmers in this region.

Many Asian countries, mixed farming involving crops and livestock integration has been a way of life since the beginning of agriculture. It is widely realized that this is the only method of providing additional income and employment to the small farmers and land less labor families. Countries in many South Asian countries, next to crops, animal husbandry has the largest employment potential in rural areas. Further this sector can make a significant contribution to promote re-distribution effects of income in favor of weaker sections.

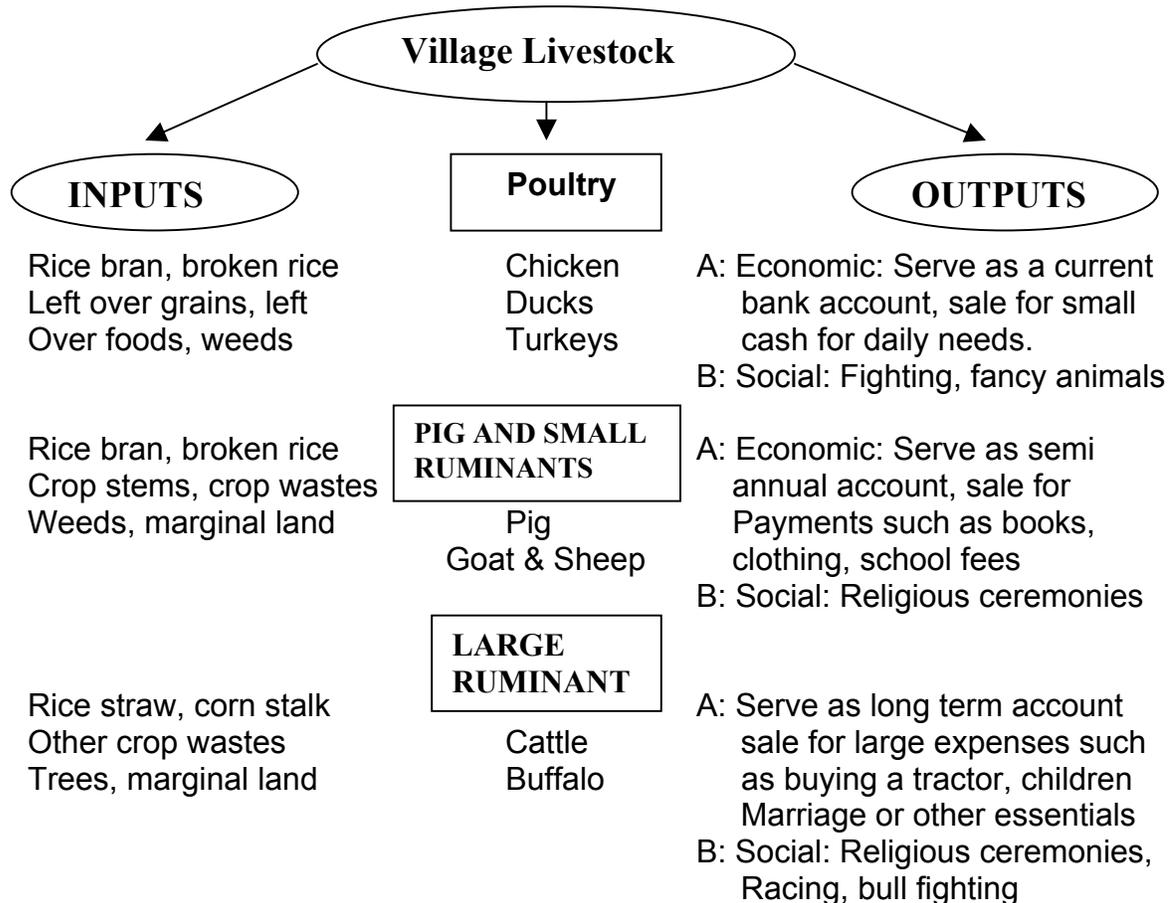


Figure 1. Role of Different Livestock Species of Animals in Rural Livestock Sector

Transformation of Asian Poultry Farming

During past two decades, in many Asian countries, the poultry farming has made a spectacular progress transforming itself from a backyard industry into a dynamic and sophisticated agri-based industry. During these years industry has grown in size, quality and productivity. As about 60% of the world's population live in Asia and average consumption of eggs and poultry meat among most of the people in this region is well below that in developed countries. This is where the demand for poultry products will increase most in the future.

Compared to other livestock sectors, the poultry industry is showing a characteristic tendency to a rapid application of advanced technology. There are some clear differences between poultry husbandry and the animal husbandry in general, which can explain the fast developments in the poultry industry, such as: a high rate of reproduction, a quick return on capital invested and the absence of the necessity to own large area of land. In the past two decades per capita consumption of poultry meat has increased by over 100 percent in many countries. Several factors contributed to this trend and the first and foremost in increasing consumer preference for poultry meat among

Development of Livestock Sector in Asia

all communities and religions in the region. Since it is accepted by all communities, it can be called as the “ Universal Meat” in the region.

Present Situation of Livestock Sector

Change in Livestock Population and Husbandry Practices

Table 1 Trends in Cattle Populations

Unit: 1,000heads

Country	1970	1993	1998
India	178,300	192,650	212,121
Pakistan	14,674	17,779	18,000
Bangladesh	20,509	23,386	23,962
Thailand	N.A	6,037	6,328
Philippines	1,820	1,914	2,395
Taiwan	285	158	N.A
Rep. of Korea	1,310	2,269	2,922
Japan	3,593	4,980	4,708
Mongolia	1,687	2,336	3,612

Source: Survey on Meat Production and Marketing in Asia ; FAO Database, 1999.

The populations of major livestock species have been increasing in accordance with rapid increase in demand for meat, although there are differences in growth rates of its population among countries (Table 1, 2 and 3). While the growth rate of animals population are high as mentioned, the number of farm house holds raising animals have been decreasing as described later. Thus, the average size of farms raising the three major animals had generally expanded during the period.

Table 2 Trends in Pig Population

Unit: 1,000heads

Country	1970	1993	1998
India	6,900	10,500	16,005
Thailand	5,132	4,655	7,000
Philippines	6,910	7,954	10,210
Taiwan	2,901	9,755	N.A
Rep. of Korea	1,126	5,046	7,544
Japan	6,335	10,966	9,904
Mongolia	11	49	20

Source: Survey on Meat Production and Marketing in Asia ; FAO Database, 1999.

Table 3 Trends in chicken population

Unit: million birds

Country	1970	1993	1998
India	138.5	320.0	375.0
Pakistan	30.6	130.0	223.0
Bangladesh	41.5	124.3	138.2
Thailand	58.8	105.6	170.0
Philippines	58.9	64.7	137.6
Taiwan	14.8	87.7	N.A
Rep. of Korea	23.6	74.9	85.4
Japan	223.5	334.7	303.0
Mongolia	N.A	74.0	65.0

Source: Survey on Meat Production and Marketing in Asia ; FAO Database, 1999.

Trend in Animal Raising Practices

In Some countries the number of farm households raising cattle, pig and chicken have increased and others decreased as presented in the table 4, 5 and 6. Among surveyed countries, the developed and industrialized countries, despite the increase in animal population, the number of farm households raising livestock had reduced as a result of industrialization and technological advance in the livestock farming. Animal population increased as the small-scale farming became replaced by large scale farming during the transitional period.

Table 4 Number of Farm Households raising Cattle

Unit: 1000

Country	1970	1975	1980	1985	1993
Bangladesh	N.A	N.A	7,260	9,070	11,400
Pakistan	7,337	7,427	7,887	8,770	8,889
Thailand	N.A	826	826	822	N.A
Philippines	1,565	N.A	1,496	N.A	N.A
Taiwan	N.A	N.A	867	826	822
Rep. of Korea	1,105	1,286	1,019	1,091	631
Japan	1,210	634	479	380	265
Mongolia	7	7	7	7	8

Source: Survey on Meat Production and Marketing in Asia, Gifu University 1998.

Table 5 Number of farm Household Raising Pigs

Unit: 1000

Country	1970	1975	1980	1985	1993
Thailand	N.A	1,263	777	778	N.A
Philippines	3,903	N.A	5,632	N.A	N.A
Taiwan	583	345	175	84	33
Rep. of Korea	883	654	502	251	129
Japan	445	223	141	83	30

Source: Survey on Meat Production and Marketing in Asia, Gifu University 1998.

Table 6 Farm Households Raising Chicken

Unit:1000

Country	1970	1975	1980	1985	1993
Bangladesh	N.A	N.A	10,270	10,930	15,400
Pakistan	9,000	11,000	10,000	12,000	16,000
Thailand	N.A	2,638	4,435	3,249	N.A
Philippines	126,298	N.A	56,465	N.A	N.A
Rep. of Korea	1,339	1,095	692	303	216
Japan	1,721	522	196	131	15

Source: Survey on Meat Production and Marketing in Asia, Gifu University 1998.

In the case of developing countries, due to diversification of agriculture, crop and livestock integration becoming more sustainable system, farm households raising livestock has been increasing. As presented in table 4 there was an increasing number of households raising cattle in countries such as Bangladesh, Pakistan, and Mongolia. But there was a drastic reduction of families rearing cattle in countries like Japan and Rep. of Korea.

Farm households raising pigs have been declining in the majority of the surveyed countries except in the Philippines. It is interesting to note that Taiwan being one of the largest exporting countries in the region also shown a dramatic reduction of farm families raising pigs. But large-scale farming is getting popular despite the problems like environmental pollution. The number of chicken raising families is also increasing in developing countries but with large scale poultry farming becoming more profitable in developed and industrialized countries, there was a sharp reduction of families raising poultry. Although growth rates of animal population are high, in order to secure per capita consumption of meat, it is important to compare these rates with growth rates of human population. Growth rate of cattle population is not so high as growth rates of human population. However, growth rate of pig and chicken are relatively higher than human growth rates.

Trend in Livestock Production

Asian region raised 464 million cattle, 153 million buffaloes, 527 million pigs, 412 million sheep, 446 million goats, and 7080 million chickens in 1999 (FAO, 2000). But the Asian share of world total meat production has been quite low when compared to its animal population. Although the demand in developing countries for animal proteins is

Development of Livestock Sector in Asia

increasing, animal production is not keeping pace with the growth in demand. Consumption figures are lower than world average but the livestock industry is growing in this region, especially good progress has been made in the poultry sector. Judging from the animal numbers and meat output, as presented in table 7, there seems to be substantial room to make fuller use of livestock potential in this region.

Table 7 Asian Contribution to World Animal Population and Meat Production (1998)

Animal Species	Population in Million Heads			Meat Production in Million tonnes		
	Asia	World	Asian Share %	Asia	World	Asian Share %
Cattle	464	1,338	34.7	10.5	55.3	18.9
Buffalo	153	158	96.8	2.8	3.0	93.3
Pig	527	912	57.8	47.0	87.9	53.4
Chicken	7,080	14,139	50.0	16.5	52.0	31.7
Sheep	412	1,068	38.5	3.3	7.5	44.0
Goat	446	709	62.9	2.7	3.7	72.9

Meat Production and Consumption

From 1990 to 1997, annual production of livestock-based foods in the Asian region has steadily increased and has continuously contributed significant shares to the world production (Table 7). While meat consumption in the region as a whole has grown significantly in the past decades, the growth has been relatively greater in East Asian countries. Although Asian countries have kept a grain core dietary pattern for long time, the economic growth in recent years has gradually changed to meat increasing in dietary.

Table 8 Trend in Meat Consumption in Asia

	1970				2000			
	Total Meat	Beef	Pork	Chicken	Total Meat	Beef	Pork	Chicken
Sri Lanka	4.50	3.00	0.10	1.20	5.30	1.70	0.10	3.40
India	3.60	2.30	0.30	0.10	4.50	2.60	0.60	0.60
Pakistan	7.50	4.70	NA	0.20	12.40	6.30	NA	2.30
Thailand	NA	6.70	5.80	5.80	NA	3.50	7.30	13.50
Philippines	NA	2.30	10.10	2.60	NA	4.90	13.60	7.60
Malaysia	15.80	1.70	6.60	6.90	51.10	2.00	11.70	36.70
Japan	17.50	2.90	7.10	4.70	43.80	10.10	17.90	15.40

Source: FAO Data base,2002

Development of Livestock Sector in Asia

In many Asian countries, the main animal protein source is fish and fish products but due to several factors there is a relative increase in meat consumption though the total amount consumed is higher for fish and fish products.

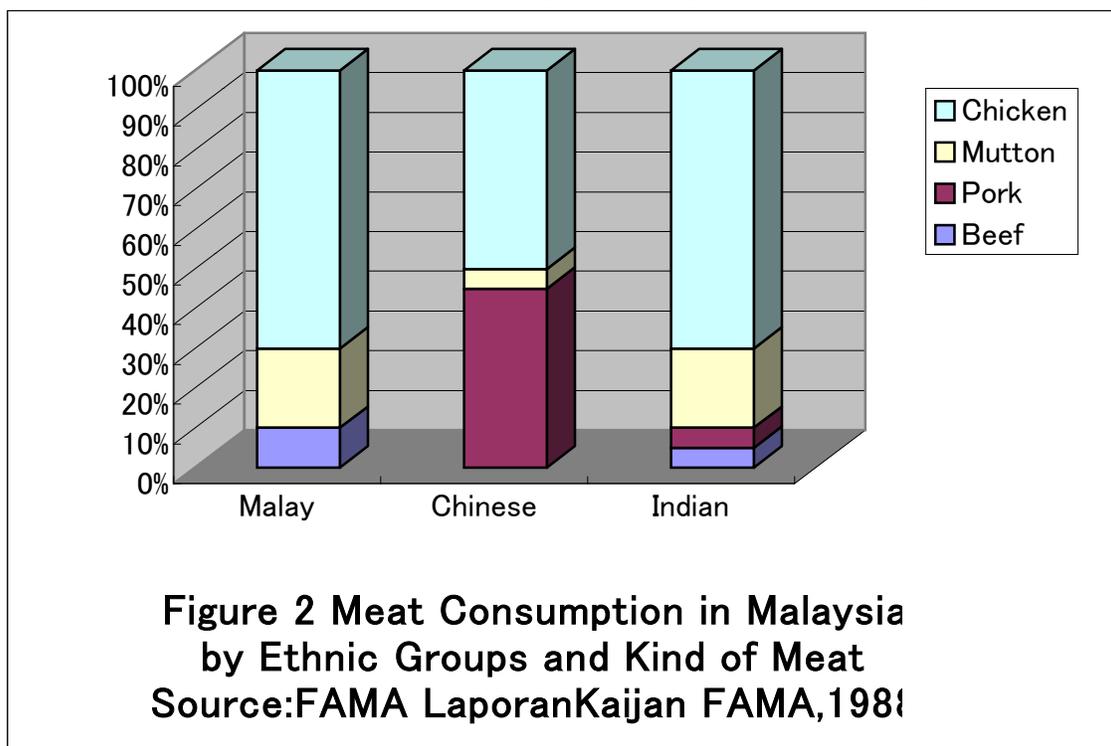
The types of meat consumed in the Asian region are shown in Table 8 and according to this study it is revealed that the types of meat eaten differs from one country to the other. This is due to the cultural and religious beliefs, food habits with changing dietary pattern. Among these countries South Asian and South East Asian countries consume more poultry meat than other type of meat. However, countries in the Eastern part of Asia eat more pork than chicken or beef.

Religious and Cultural Affects

Along with a wide variety of religious followings and cultures with different food habits, preferences and taboos, the meat industry in Asia has been trying to satisfy wide range of consumers in the region. Islamic countries in the region have no pork production, but many east Asians consider it a delicacy and Hindus do not consume beef. Pakistani, Mongolians, and Iranian eat more sheep and goat meat than other meat types. Overtime, food taboos can change, Vegetarian Hindus, for example, now consume enough eggs to make India the world's fifth largest egg producer. Consumer attitude affect their eating habits; and eating habits, in turn, affects demand for the food purchased (Capps, et al; McNaughton, et al). As a result consumer attitudes and perception need to be monitored and understood in order to develop the meat industry in the region. Figure 2 shows the meat consumption by different ethnic groups in Malaysia. This data indicates that chicken meat is the most preferred meat in all communities.

Sustainable growth in the livestock development

Livestock development programs in developing Asian countries have been hardly based on the understanding of the livestock production systems. The relationship between biological, technical and social factors are important while implementing locally or internationally assisted development projects. The demand for animal protein has drastically increased past two decades which in turn increased commercially based livestock production systems to meet the market. There has been an over emphasis on single commodity development, and a technology



driven orientation with little or no participation of farmers, and formation of stronger farmer based institutions (Kaasschieter et al., 1992).

The number animals increased in the region had a less contribution to the increase of production of each sector whether meat, milk or egg. Breeding programs, artificial inseminations and strategies used to upgrade the animal population not a successful one in many developing countries, particularly when applied to small mixed-

Development of Livestock Sector in Asia

farming systems. Governments of many developing countries give less priority to rural livestock sector, resulting in underdeveloped infrastructure, limited access of farmers to markets and credit, low and fluctuating producer prices, inadequate producer organizations and weak marketing organizations.

For the past three decades many Asian countries adapted various method to improve local livestock population. Indigenous genes are rapidly disappearing due to cross breeding. However, many local breeds have special adaptive traits for disease resistance, ability to survive on adverse conditions such as high temperature, poor quality feed and water. Preserving this genetic variation specific to their environments will be important in future sustainable development in livestock production.

Constraints and Future Implications

Most of livestock population is nondescriptive with low production potential. The strategy is to improve productivity through better utilization of available feed, with improving forage and pasture, upgradation program be undertaken with semen of exotic breeds and dairy breeds to increase meat and milk production. Increasing self-sufficiency on feed grain will be an important factor in future livestock sector developmental programs. Those countries that have vast land and large rural population must be organized to produce more feed grains and a better payment scheme and a reliable marketing arrangement are necessary.

Since feed cost is becoming the most important factor in livestock production, in the immediate future, animal producers and government policy makers must look closely at their locally available feed resources and produce more feed grains that need not to be bought with US dollars. Poultry farmers have to go back to cheap diets that are economically viable substitutes, which can be grown locally. There is no doubt that the present economic crisis has taught Asian countries, especially developing Asia, an important lesson for placing too heavy a dependence on imported raw materials in animal production.

In the case of newly Industrialized countries and Japan, there has been increasing opening of the domestic market to imported meat and meat products. Thus to be competitive to cheap imports, cost of production must be lowered by the way of upgrading production technology, breeding improvement and further improvement of existing marketing structure. Industrialized countries in the region, the environmental pollution emerged as a major challenge for further expansion of intensive system of livestock raising. Therefore waste disposal facilities must be developed and modern abattoirs should be available in major production areas instead of consumption areas. In many studied countries, meat production is done in unhygienic condition and meat industry is unorganized. Modernization of existing slaughterhouses and establishment of new modern and hygienic plants must undertake at national level.

In developing Asian countries, the statistics on livestock sector is not properly collected and maintained. Therefore proper data on animal population, production, marketing and disease incidence should be collected. Based on them short term and long term development plan should be prepared for the development of the sector. This inadequacy has to be overcome through periodic surveys on livestock industry. Lack of proper marketing and non-accessibility to markets, result in the exploitation of farmers by the middleman at various levels. It is difficult for a small holder farmer owning one or two animals to organize their marketing properly. Thus, small-holder livestock farmers should be encouraged to organize themselves into cooperatives, associations or public groups to facilitate requisites inputs to increase meat production and improve its quality as well as to market their surplus produce at appropriate price.

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Development of Livestock Sector in Asia

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