Asian Livestock: Opportunities, challenges and the response

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Consumption of livestock products in developing countries in general and Asia in particular has shown a remarkable upward trend since the early 1980s. Delgado et al. (1990) were among the first to call attention to these trends and characterized the phenomenon as a revolution of sorts. Although some debate has arisen recently on the use of the term 'livestock revolution' assigned by them (Pica-Cimara and Otte, 2009.), there is little doubt that Asian livestock sector growth over the past nearly four decades has been extraordinary. While global meat consumption recorded a compound annual growth of a little over 2.5 percent between 1980 and 2007, Asian consumption grew at the rate of 5.2%, thus more than doubling the share of Asia in global meat consumption. Comparable figures for milk consumption were 1.4 percent and 4.4 percent (Table 1). To be sure, there were considerable variations both across countries and time with the growth being much more rapid during the decades of 1970s, 1980s and 1990s (Figures 1 and 2). Although, at the global and regional level some slow down is predicted in future growth in the sector, general expectations are that the demand for animal source foods will continue to grow at a reasonable pace creating diverse opportunities within and across livestock producing regions including Asia

Table 1. Total consumption of meat and milk: Asia and the World (million tones)

Region	Meat		Milk*	
	1980	2007	1980	2007
World	134.0	266.0	455.4	669.3
Asia	29.1 (21.7)**	112.8 (42.4)	78.1 (17.1)	250.0 (37.4)
East Asia	19.1 (14.3)	80.7 (30.3)	13.1 (2.87)	54.3 (8.10)
China	14.7 (11.0)	71.5 (26.9)	3.6 (0.80)	41.1 (6.14)
South East Asia	3.49 (2.60)	14.0 (5.26)	3.6 (0.80)	9.5 (1.42)
South Asia	4.49 (3.35)	9.49 (3.56)	47.3 (10.4)	147.8 (22.1)
India	2.57 (1.91)	3.80 (1.42)	31.9 (7.00)	102.2 (15.3)
Rest of Asia	2.02 (1.51)	8.61 (3.23)	14.1 (3.10)	38.4 (5.73)

* Excluding butter. ** Figures in parentheses are percentages to World total.
Source: FAO Statistics.

Production has responded to the growing demand capitalizing on low labor costs, technology transfer and structural changes that facilitated private investment in poultry production and public investment in dairy related institutional development. In Asia's meat sector, more recent growth seems to be emanating from pork sector led by China and Vietnam and spurring similar structural changes in pork industry as occurred in broiler and egg production. The demand for milk is also expanding rapidly in East Asia, led by China, and South East Asia, led by Vietnam. Although still modest in magnitude when compared to South Asia, China's emergence as a major dairy producer is certainly challenging the reputation of South Asia as the traditional dairy producer within Asia. Trade in animal products has grown even more rapidly even though, as a proportion of total consumption, trade in livestock products remained small. More significantly, however, Asia is emerging as a large importer of concentrate feed for poultry and pig production.

Data on production and trade of feed is not as readily available as meat and milk but statistics from International Feed Industry Federation (IFIF) place global compound feed production at over 700 million tonnes. Actual production is however expected to be significantly higher than that since IFIF numbers are derived from feed production surveys in plants producing over 2,500 mt per year and do not include feed production in smaller commercial plants or on-the-farm production. According to some estimates actual global production of feed is expected to be as high as twice the IFIF figures. In

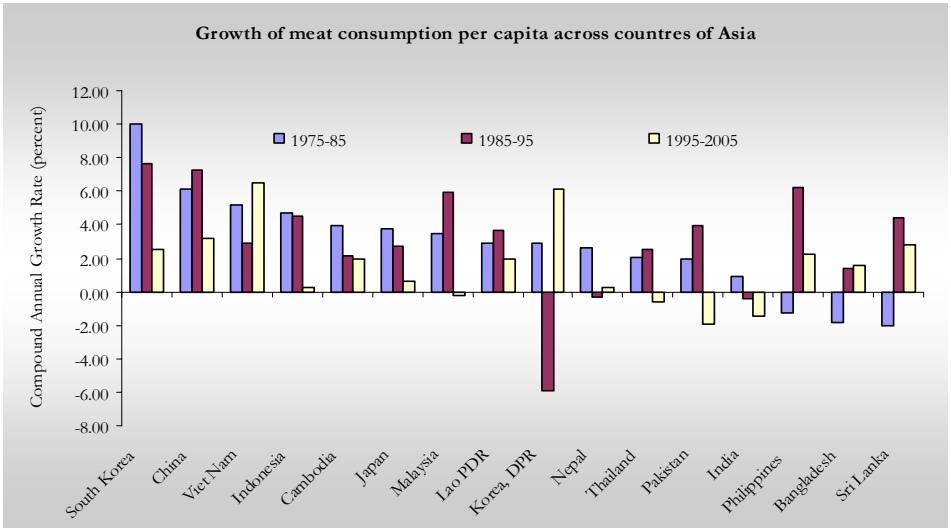

Figure 1. Growth of meat consumption per capita across of Asia

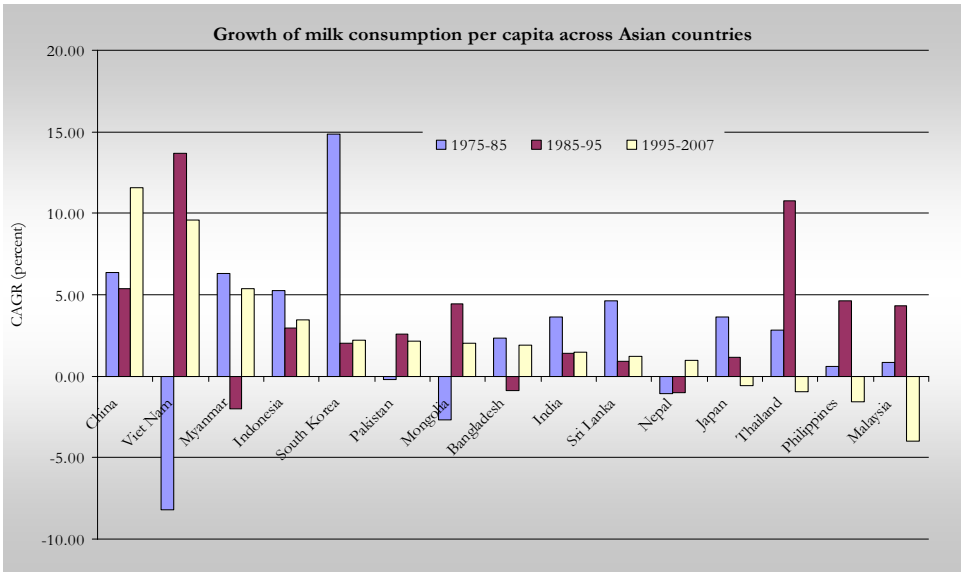

Figure 2. Growth of milk consumption per capita across of Asia countries

Table 2. Total production of meat and milk: Asia and the World

Region	Meat		Milk*	
	1980	2007	1980	2007
World	136.0	272.0	465.6	680.6
Asia	28.6 (21.0)	109.4 (40.2)	69.9 (15.0)	239.5 (35.1)
East Asia	18.8 (13.8)	75.9 (27.9)	10.2 (2.19)	50.5 (7.42)
China	14.8 (10.9)	70.4 (24.1)	2.92 (0.63)	39.8 (5.85)
South East Asia	3.63 (2.67)	13.8 (5.10)	0.73 (0.16)	3.31 (0.48)
South Asia	4.61 (3.38)	12.4 (4.55)	46.4 (9.96)	124.3 (18.3)
India	2.62 (1.93)	6.55 (2.41)	31.5 (6.77)	103.3 (15.2)
Rest of Asia	1.56 (1.15)	7.30 (2.68)	12.6 (2.71)	61.4 (9.02)

* Excluding butter.
** Figures in parentheses are percentages to World total. Source: FAO Statistics

many Asian countries feed manufacturers have shifted production from poultry into pigs due to softening demand for poultry feed in the wake of recent HPAI outbreaks. This is likely to spurstructural changes in the pork industry, especially in China and Vietnam. Indeed, given the likely limits to technical change in broiler production, swine industry in Asia could emerge as a key competitor to poultry competing heavily for compound feed and ingredients—corn, soybean and fats. According to IFPRI IMPACT forecasts, China is expected to double its corn production between 1997 and 2025 and yet import approximately 40 million tonnes of corn to meet the growing demand. This could put upwards pressure in corn prices especially as the demand also intensifies in the US for ethanol production. This could also mean other cereals—wheat, for example, being utilized as feed (Falcon, 2008). How that affects the competitiveness and political economy of Asia's agriculture and livestock sector is any body's conjecture at this point.

Table 3. Projections on maize production and trade

	Production		Annual growth, %	Net trade	
Country	1997	2025		1997	2025
China	121.9	230.6	2.3	-1.9	-39.8
India	10.33	14.4	1.2	0.0	0.5
Indonesia	9.40	14.1	1.5	-0.5	-0.2
Japan	0.00	0.00	0.0	-16.3	-15.4
South Korea	0.08	0.14	2.0	-8.1	-12.7
Malaysia	0.05	0.07	1.3	-2.3	-3.9
Myanmar	0.30	0.54	2.1	0.1	0.2
Pakistan	1.27	2.39	2.3	0.0	0.1
Philippines	4.17	8.46	2.6	-0.4	-1.9
Thailand	4.45	8.05	2.1	-0.2	-1.3
Vietnam	1.60	2.78	2.0	0.1	-0.7

Source: Rosegrant (2004). Cited in Falcon 2008.

Recently released State of Food and Agriculture (SOFA) report by FAO has presented global analysis of the livestock sector and it highlighted three overarching messages that merit discussion in the context of Asia.

Firstly, livestock products make important contributions to food security and poverty reduction for many low-income rural families in Asia. Livestock rearing is a key livelihood and risk mitigation strategy for small and marginal farmers and its share in the total value of agriculture and allied activities has been growing in a number of Asian countries. It is widely recognized that relatively more equal distribution of livestock assets (compared to land) makes poor far more important in livestock production than crop production and hence investments in livestock can have more direct and immediate impact on poverty reduction. Livestock is also one of the most important productive assets in rural areas and serves as a critical store of wealth for farm families and as an insurance mechanism for coping with household-related crises Further, livestock rearing at the household level is largely a women-led activity, and therefore income from livestock rearing and decisions related to use of livestock related within the household are taken by women. Interventions in a number of countries have demonstrated that support for livestock rearing can potentially contribute significantly to the empowerment of women and an increasing role in decision making at both the household and community level.

Growing demand for livestock products and technological changes along the food chain have led to major structural changes in livestock production and marketing systems. For dairy and small ruminant production, the production costs on small farms are often comparable with those of large scale enterprises. However, in a number of countries in Asia, high transactions costs along the value chains impose disproportionate burden on small producers in accessing expanding markets. Similarly, smallholder swine-pig meat producers in Asia face numerous challenges related to market evolution resulting from rapid intensification of pig production by large integrated firms and increasing cross-border trade in live pigs and pig-meat. Smallholder producers have the potential to overcome these challenges but need support from collective organizations and support networks. One element of the future action agenda in smallholder livestock development in Asia must therefore focus on creating

innovative institutional arrangements that are efficient, competitive, sustainable and inclusive and enable small producers enter into supply arrangements with large processors. This requires concerted public action in support of small farmer enterprise development, including cooperatives, and development of participatory decision-making mechanisms that enable dialogue and collaboration between small producers, service providers and decision makers.

The region has produced a number of successful models to demonstrate the potential of livestock sector in empowering rural poor and generating poverty alleviating growth but much work still remains to be done to fully capitalize the potential of livestock sector in support of poor peoples' livelihoods. In this context, the SOFA report argues that it is important to focus future livestock development agenda on the institutional reforms and public and private investments that consider three objectives: (i) to enhance the ability of smallholders to take advantage of the opportunities offered by growth in the sector; (ii) to protect the poorest households for whom livestock serve as a crucial safety net; and (iii) to enact broader rural development policies to ease the transition of many rural households out of the sector.

The second key message of the report is that livestock production is placing increasing pressures on natural resources and the environment and corrective action is needed to encourage the provision of public goods such as ecosystem services and environmental protection. This requires addressing policy and market failures and developing appropriate incentives including market-based policies, such as taxes and fees for natural-resource use which would motivate producers to internalize the negative externalities associated with livestock production (FAO, 2010).

The report notes that livestock contribute to and are victims of climate change. But, at the same time, the sector has enormous potential to contribute to climate change mitigation. Realizing this potential will however require new and extensive initiatives at the national and international levels, including: the promotion of research on and development of new mitigation technologies; effective and enhanced means for financing livestock activities, developing and transferring technologies to mitigate green house green house gas emissions. Some negative environmental consequences from livestock production stem from problems associated with open-access common property resources. Clarifying property rights and promoting mechanisms for their enforcement would contribute towards sustainable management of these resources. On the technology side, promotion of technologies such as animal genetic improvement, animal feeding, improved grazing-land management, and silvo-pastoralism can mitigate the negative effects of livestock production on natural resources and the environment (FAO, 2010).

Thirdly, in view of the widespread prevalence of a number of production limiting and trade preventing diseases in the region and growing health concerns resulting from zoonotic and food-borne diseases, support for the development of policies and delivery systems for enhancing food safety and minimizing the animal disease burden is another area that deserves focused attention. Animal health services face new challenges of battling animal diseases that cause mortality, reduce animal productivity and harm human health because of the risk of animal to human disease transmission. In a number of countries, animal health systems suffer from institutional weaknesses that lead to poor delivery of animal health services and higher risks to livelihoods and human health. The SOFA report warns however that the poor face different risks and have different incentives and capacities to respond than intensive commercial farmers. Therefore, animal health service providers have the additional challenge of recognizing the differences between their stakeholders and developing mechanisms to reach them all. An effective solution to addressing this challenge will require that producers at every level, including poor livestock keepers, are engaged in the development of animal disease and food-safety programmes.

Finally, it is important to recognize that addressing the issues confronting the sector, action is required at all levels, from the local level, through the regional and national levels to the international level. The challenges of mobilizing adequate public and private investment and enhancing the quality of sector governance can't be solved by individual actors. They require integrated efforts by a wide range of stakeholders to capitalize on the strength of livestock production systems in Asia and the need to tackle those root causes with potential negative impact on further rapid livestock sector development. It is also imperative that such efforts be realistic, equitable, and conscious of region's socio-economic and cultural dimensions. Developing an agenda for action supported by governments,

international institutions, multilateral and bilateral donors and civil-society stakeholders is a crucial first step towards a livestock sector characterized by: better governance; a more inclusive development process; levels of investment commensurate with the importance of the sector and the challenges it faces; and improved international cooperation.

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