

## Increasing global demand for animal products

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Human population growth, increasing urbanization and rising incomes are predicted to double the demand for, and production of, livestock and livestock products in the developing countries over the next 20 years (Delgado *et al.*, 1999). Livestock production is growing faster than any other agricultural sub-sector and it is predicted that by 2020, livestock will produce more than half of the total global agricultural output in value terms. This process has been referred to as the ‘livestock revolution’ (Delgado *et al.*, 1999). Important global livestock sector trends reflecting this ‘revolution’ are:

- a rapid and dynamic increase in consumption of livestock products in developing countries
- a geographic shift of livestock production from temperate and dry areas to warmer, more humid and disease-prone environments
- a change in livestock production practices from a local multi-purpose activity to an increasingly market-oriented and vertically-integrated business
- increasing pressure on, and competition for, common property grazing and water resources
- more large-scale, industrial production units located close to urban centres, potentially causing severe environmental damage and posing public health risks
- decreasing importance of ruminant vis-à-vis monogastric livestock species
- a rapid and large rise in the use of cereal-based feed.

Yet, these developments occur mostly in a policy and institutional void. Livestock are blamed for creating chronic food shortages at global level (Rifkin, 2002) while others glorify livestock as the king’s avenue to development. In any case, implications of the structural shifts in the livestock sector are not being adequately addressed by public policy making, and this constitutes both an immense threat to national and international public goods and a huge missed opportunity.

The “Livestock Revolution” has been described as driven by demand resulting from population growth, income growth and rising urbanization. But there are also important shifts on the supply side: prices for livestock products have generally declined more than prices for food or feed grains, and the massive spread of improved technology in the intensive sub-sector has triggered vast efficiency gains.

Increasing the supply of animal products is being achieved by combining an increase in the number of animals with the improvement of productivity, and processing/marketing efficiency. Land availability limits the expansion of livestock numbers in extensive production systems in most regions and the bulk of the increase in livestock production will come from increased productivity through intensification and a wider adoption of existing and new production and marketing technologies.

With respect to structural changes in livestock production systems, the strongest trend has been the advent, and subsequent fast expansion, of industrial, vertically integrated, large-scale livestock production, particularly for pig and broiler production in East Asia and Latin America, and broilers production in South Asia, often located close to large urban centres. Similar trends are apparent, albeit to a lesser degree, in dairy and beef production. In East Asia the growth in demand for feed grain associated with industrial production has been accompanied with rapidly increased imports.

Production is shifting to developing countries and by 1997/99 their share in world meat production was 53 percent and in milk production 39 percent as compared with 40 and 28 percent only ten years earlier (late-1980s). Again, this was in part due to the collapse of production in the transition countries, but it is a trend even in the absence of this phenomenon. Annual growth of meat and milk production in developing countries is projected at 2.4 and 2.7 percent respectively. This would raise developing countries’ share in world meat production by 2030 to 66 percent (247 million tonnes), and in milk production to 55 percent (484 million tonnes).

From 1989 to 1999, the growth in white meat (pork and poultry) production in developing countries has been remarkable at more than double the growth of ruminant meat. There are, however, major regional differences. Growth in poultry meat production has been particularly spectacular in East Asia (11.7 percent p.a.) and South Asia (7.2 percent p.a.) and reflects the rapid intensification of the poultry industry in the region. Latin America saw annual growth rates of 9 percent. Yet in sub-Saharan Africa the annual growth rate was 2.6 percent, which, while substantial, was considerably less than in Asia and Latin America. Red meat (ruminant meat) accounted for almost 37 percent of total meat production in the developing countries in the late-1980s, but declined to 31 percent in 1997/99 and is expected to decline further.

Per caput food consumption of animal products continues to increase both in the developing and industrialised countries, as well as in countries in transition, as a result of increasing average per caput real incomes. The gap between food consumption in the developing and industrialised countries is predicted to narrow as consumption in the latter countries has become saturated. Average daily food energy consumption in developing countries in 1997/99 was estimated at 2680 kcal/caput. Owing, however, to the uneven distribution of dietary energy consumption in these countries, a significant percentage of the population is estimated to receive less than the daily maintenance requirement (ranging from 1700 to 2000 kcal/caput per day), resulting in some 17 percent of the population (777 million) being undernourished.

Changes are also occurring in the type of food consumed. With increasing incomes, demand for greater food variety and for higher value and quality foods such as meat, eggs and milk, increases. The latter is at the expense of food of plant origin such as cereals. These changes in consumption, together with sizeable population growth and urbanisation, have led and will continue to lead to large increases in the total demand for animal products in many developing countries.

Between 1997/99 and 2030, per caput meat consumption in developing countries is projected to increase from 25.5 to 37 kg per person compared with an increase from 88 to 100 kg in the industrialised countries. Similar projections for milk (and dairy products) consumption are from 45 to 66 kg and from 212 to 221 kg in the developing and industrialised countries, respectively, and for eggs from 6.5 to 8.9 kg and from 13.5 to 13.8 kg in the developing and industrialised countries, respectively. Wide regional and country differences are also evident in the quantity and type of animal products consumed - reflecting the traditional preferences based on availability, relative prices and religious and taste preferences.

The future holds both opportunities as well as serious pitfalls for animal production in developing countries. There is a danger that livestock production and processing will become dominated by integrated large-scale commercial operations, displacing small-scale livestock farmers and thus exacerbating rural poverty and malnutrition. Furthermore, uncontrolled expansion of highly intensive animal production could have major environmental consequences. On the other hand, correctly managed, a dynamic livestock sector could prove catalytic in stimulating rural economies. However, the livestock sector will not take on this role on its own but requires pro-active policies on behalf of the private and public sector that will:

- remove policy distortions that artificially increase the economies of scale to the disadvantage of the small-scale producer;
- build the institutional and infrastructural capacities that will allow small-scale rural producers to successfully compete and integrate within the developing livestock industry;
- provide a conducive environment, through public sector investment where necessary, to allow producers to increase production through improved efficiency and productivity; and
- effectively reduce the threat of environmental, animal and human health risks.

In the absence of such pro-active development policies, the impact of the increased demand for livestock products in terms of increased security of safe food supplies, particularly for and from the poor, and of environmental protection and poverty reduction will be far less favourable.

## References

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