Investing in livestock sector development for poverty reduction

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Philipp Mellor astutely observed that "All too often livestock are seen as something prosperous people consume, not something poor people produce".

In reality, however, among largely agrarian economies, which are home to the majority of the world's poor, livestock are an integral part of smallholder crop-livestock farming systems. There is thus much greater scope for investment in livestock sector development for poverty reduction than generally realized, particularly in development that enables smallholders to take advantage of the growing demand for livestock products by more affluent members of society.

Poverty and hunger have significant negative externalities affecting 'non-poor' segments of society (for example conflict and infectious diseases) and thus, apart from ethical concerns, economic considerations and enlightened self-interest should put the reduction of poverty high on the global agenda.

Agriculture, livestock and economic development

Nearly three-quarters of the extremely poor – that is around 1 billion people – live in rural areas and, despite growing urbanization, more than half of the 'dollar-poor' will reside in rural areas until approximately 2035. Most rural households depend on agriculture as part of their livelihoods and around 90 percent of the world's extremely poor are small-scale farmers.

Smallholders − however they may be defined − account for a considerable share of agricultural production throughout most of the developing world, particularly in South Asia and sub-Saharan Africa. In South Asia more that 80 percent of farms are smaller than 2 hectares. Globally, the numbers of poor livestock keepers have been increasing at a rate of about 1.4 percent per year. In terms of the absolute numbers of poor livestock keepers (less than $2/day), South Asia and sub-Saharan Africa dominate: more than 45 and 25 percent of the estimated 752 million poor livestock keepers live in South Asia and sub-Saharan Africa respectively.

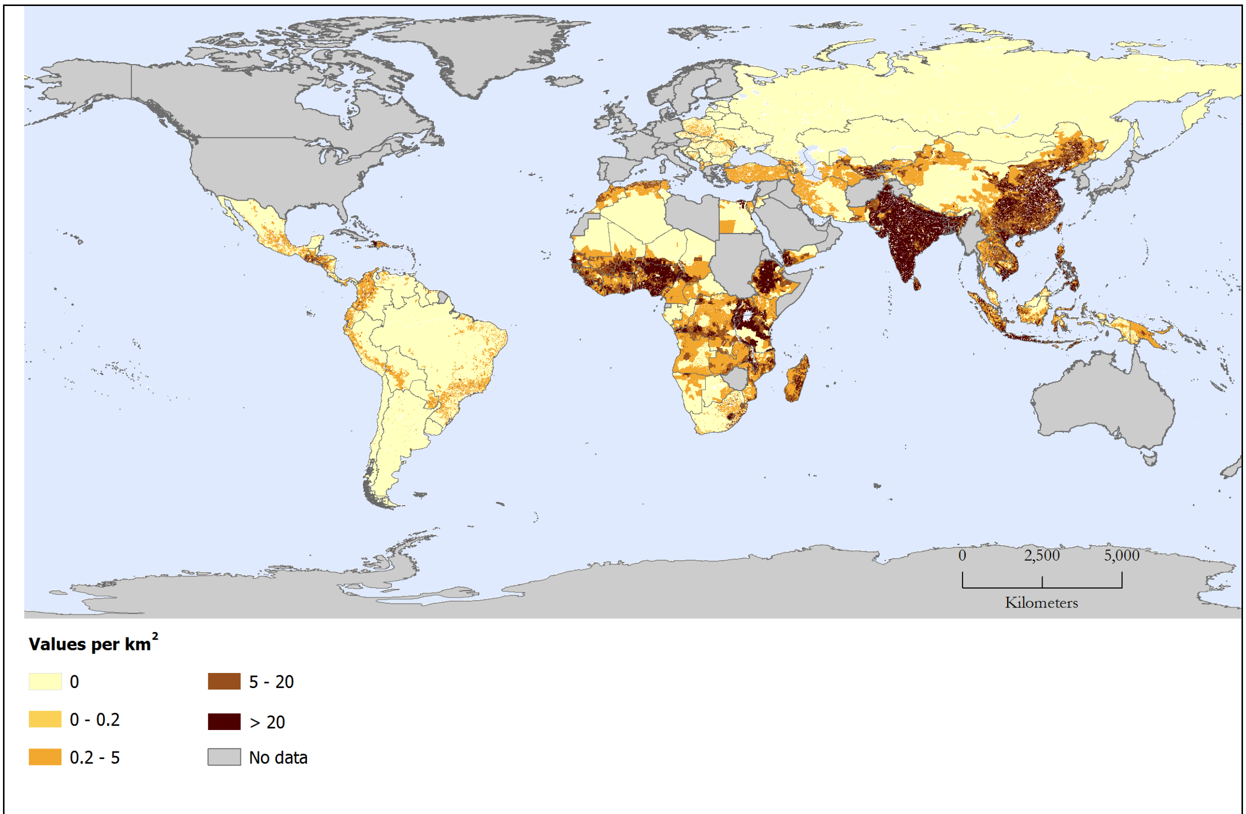

Figure 1. Distribution (density) of poor livestock keepers based on the international US$2.00/day poverty line in 2010

For more rapid poverty reduction in developing countries, it is not enough to simply focus on rapid aggregate economic growth, but attention must be given to removing the types of inequalities that limit the access and capacity of the poor to exploit their opportunities for economic advancement. For growth to be pro-poor, it must achieve income gains for the poor in an inclusive growth process, promoting demand and market participation for activities that use resources (mainly labour) of the poor intensively.

In low-income agrarian developing countries, in order to accelerate the poverty reduction potential of economic growth, stimulation of economic activity needs to occur where most of the poor are located, that is among rural communities; this also needs to take place in the economic sector in which the bulk of the poor earns a living from agricultural activities.

Agricultural productivity gains and/or diversification into high-value agricultural products, leading to increased value of output per unit of land, and, more importantly unit of labour input, and thereby to increased income, are essential for raising rural incomes and improving food security. Many rural poor keep livestock so this form of animal husbandry can make important contributions to sustainable rural development; as the demand for livestock products is growing rapidly in developing countries, diversification into livestock and increased livestock productivity should form part of any strategy for poverty reduction and agricultural productivity growth.

Despite its smaller output compared to staple crops, productivity and income growth in the livestock sector has stronger income-multiplier and poverty-reduction impacts. The demand side is responsible owing to direct and indirect income gains among rural households benefiting from income improvements; this is also generated by the supply side via linkage with the staple crop sector as a producer of by-products for livestock feed. A combined strategy for livestock and staple crop productivity growth, exploiting the close linkage between these two sectors, would have the strongest income-multiplier and poverty-reduction benefits.

Although there are many positive social outcomes that can be associated with livestock sector growth in developing country regions, there are some negative effects that need to be addressed. Two highly significant effects are the emergence and subsequent spread of infectious diseases associated with livestock and concomitant negative environmental impacts. The magnitude of negative environmental and public health externalities associated with livestock will be strongly influenced by the ways in which the livestock sector grows to meet the increasing demand for animal products.

However the social benefits of supporting livestock-raising in low-income, largely agrarian economies significantly outweigh the negativities as:

- Livestock are kept by households across all wealth groups, but in most countries poorer households are more likely to have livestock as assets than their wealthier counterparts. Therefore capacity building for marginalized livestock owners will ultimately result in poverty alleviation and help to mitigate hunger in a world that is rapidly eating itself out of house and home.
- Livestock add value to crop residues such as straw and stovers, or processed by-products such as oilseed cakes or brewers' grains. It has been estimated that cereal crop residues provide more than 650 million tonnes of animal feed, while the global supply of by-products (excluding crop residues) would provide sufficient feed energy to produce more than 500 million tonnes of milk.
- Livestock reduce the vulnerability of agricultural households to irregular weather patterns and crop losses; livestock are mobile, without a specific harvest season. They serve as a store of nutrients and wealth that can be used for smoothing of consumption and expenditure. Livestock also perform social functions and contribute to the building and maintenance of social networks that act as safety nets in times of crisis.
- Livestock enhance the agricultural productivity and income of farming households by contributing to increased crop output through animal traction and improved soil fertility, using agricultural waste (land), converting lower-value agricultural products into higher value ones and providing access to common property resources (often non-arable land), thereby broadening the income-base of resource-poor households.
- Livestock provide essential, easily absorbable micronutrients and high-quality proteins for human nutrition, which are particularly important for young children and pregnant and lactating women.

- In all developing regions, livestock make a substantial contribution to the total net output of agriculture, averaging about 35 percent. Over the last 15 years, livestock value added has grown most rapidly in the lower-middle income regions of East Asia and the Pacific, and South Asia, where many of the extremely poor live.

In these contexts, a combined strategy for encouraging livestock productivity growth would have strong income multiplier and poverty reduction benefits while enhancing the efficiency of natural resource use.

Market participation

As developing countries pass through the transition from agrarian subsistence to more diversified market economies and growth in demand for livestock products and other high-value crops becomes stronger, the livestock sector will increase its share in agricultural value added; this will be supplemented by its potential for direct and indirect income- and poverty-reducing impacts. Marketing agrifood products with high income demand elasticities, like livestock and their products, gives the rural poor a way to participate indirectly but very actively in urban growth, propagating growth benefits without social dislocation and other adjustment costs. Although poverty is very common in sparsely populated ('remote') areas, most of the rural poor live in reasonable proximity to (small and large) urban centres. Thus a strategy for poverty reduction that promotes market access incrementally, radiating outward from urban areas, would be appropriate.

As modern supply systems are expanding, the technological, institutional and informational systems supporting agrifood production have become increasingly complex. Continuous investments are needed to comply with changing production, processing, quality and safety standards. In this context, modern food systems in highly commercialized agricultural markets have introduced a new set of entry and transaction costs for producers to be competitive. The reality of agrifood supply chains in many developing countries, however, is still far removed from the model of sophisticated, highly integrated systems emanating from Organisation for Economic Co-operation and Development economies. Demand for agricultural and livestock products of all kinds mainly depends on the income levels of the domestic population and only the top income decile is a viable market for high-value processed cold chain products. Consumers representing the lower three income quintiles normally purchase animal-derived food in live animal and wet markets, to which the supply chains are mediated mainly by informal and traditional networks.

The current expansion of markets for meat, milk and eggs in developing countries and their large degree of diversity represents enormous income potential for the rural poor, many of whom own livestock (Table 1). However, the benefits of growing urban food demand reaching rural smallholders and those that rapidly expand agrifood industries will depend to a significant extent on policy decisions. Regrettably, the potential of livestock for poverty reduction associated with appropriate sector development remains largely untapped. The reasons are attributable to market and institutional imperfections, prevailing policy paradigms in developing countries with a systematic bias towards industrialization and concentration favouring large over small-scale operators, and the suboptimal provision of public goods and services, the consequences of which disproportionately affect the poor.

Table 1. Growth in demand for livestock products, 2009-2030

REGION	Beef		Pork		Poultry		Eggs		Milk	
	Abs.	Prop.	Abs.	Prop.	Abs.	Prop.	Abs.	Prop.	Abs.	Prop.
EAP	8.8	130	28.1	63	22.5	143	10.2	45	23.8	132
China	6.9	132	22.1	54	14.6	121	6.8	34	15.9	143
EECA	0.3	11	0.1	5	2.3	108	0.7	28	4.4	15
LAC	7.3	58	4.4	100	14.4	126	3.2	78	39.8	72
MENA	1.9	112	0.09	52	6.3	243	1.8	148	17.9	111
South Asia	3.4	84	1.0	160	11.5	725	5.9	294	119.0	126
India	1.3	51	0.9	160	8.9	844	4.3	280	79.3	119
SSA	3.8	113	1.1	155	3.2	170	1.7	155	20.9	107
All Regions	**25.5**	**81**	**34.7**	**66**	**60.3**	**170**	**23.6**	**70**	**225.7**	**97**

A = Absolute (million tonnes). P = Proportion (%)

Most agricultural and rural households in developing countries constitute a group that is unlikely to be recruited directly into agrifood industrialization. Even intermediate stages of sector consolidation, like contract farming, appear to be undertaken at a scale well beyond that of the average smallholder farmer. Nevertheless, at the moment, urban demand growth represents an important opportunity for all domestic food producers, including smallholders, and this should be appreciated for its inclusive development potential.

To be successful, smallholder producers need to emphasize their strengths, traditional product varieties and low resource costs, while policies for inclusive development have to be implemented to facilitate their market access. More inclusive national livestock markets will only arise with determined policy commitments to overcome existing entry barriers, information and agency failures, and historic bias in favour of integrated agrifood enterprise development.

Enabling environment

Livestock sector development requires that sound macroeconomic policies and a generally conducive institutional framework be in place. For instance, a low inflation rate, stable fiscal policies, a functional judicial system and limited corruption are critical for livestock keepers (and entrepreneurs in general) to provide incentives for planning and making long-term investments in production capacity.

Livestock sector policy-makers are primarily responsible for the supply of public goods and market-driven interventions in the major livestock sector domains, and not for promoting changes in the overall policy framework of, for example, the credit and research domain. However, within broader livestock development policy and strategy, they could make efforts to attract investment and entrepreneurship into the livestock domains where development is likely to make the largest contributions to livestock sector growth. One way of doing this is by facilitating partnerships and collaboration with other public and private sector actors that play essential roles in supporting livestock sector development.

The livestock sector's potential for contributing to economic development and poverty reduction has so far remained largely untapped, and it is difficult to identify a single developing country where growth of the sector has been unambiguously pro-poor. Livestock have long been treated as an agricultural offshoot, with both policy-makers and development practitioners giving higher priority to staple crops than to high-value agricultural products such as animal-source foods or fruits and vegetables. This is a field where investment by public and private sectors has an important role to play. Moreover, interventions in the livestock sector have been concerned mainly with technical aspects, focusing on details of animal husbandry, feeding and disease control. Although important, these interventions have disregarded the broader policy and institutional framework in which farmers operate, i.e. the range of incentives and disincentives that underlie household production and consumption decisions. On the rare occasions when policy and institutional dimensions have received adequate attention, livestock sector policies/programmes have been designed by technical staff in livestock departments, non-governmental organizations or international organizations, with little consultation of other ministries, and limited appreciation of and connection to the non-livestock policies and markets that are critical for both livestock sector development and livestock farmers themselves.

Agriculture is heterogeneous, highly complex and affects a large set of stakeholders. Agricultural development therefore requires approaches that are carefully adapted to local conditions and large-scale blueprint planning is likely to fail. Rather, experimentation with modest but targeted interventions and continuous learning from the results are more likely to lead to the desired outcome of poverty eradication. Transactions costs are steep and risks of coordination failure are high in agriculture and public leadership is needed to promote lower income agrifood supply chains. For public agencies mandated to support agriculture the most important role does not concern public expenditure, but policy-making, coordination, regulation and provision of services the private sector will not provide.

Further reading

Fan, S. & Chan-Kang, C. 2004. Returns to investment in less-favoured areas in developing countries: a synthesis of evidence and implications for Africa. *Food Policy*, 29(4): 431-444.

Fan, S. & Hazell, P. 2001. Returns to public investments in the less-favored areas of India and China. *American Journal of Agricultural Economics,* 83(5): 1271-1222.

Food and Agriculture Organization of the United Nations (FAO). 2009. *Livestock policy and institutional change for poverty reduction.* Background paper for the FAO Committee on Agriculture, 21st Session. Rome.

Food and Agriculture Organization of the United Nations (FAO). 2010. *Missions, constitution and governance.* Rome, FAO.

Otte, J., Pica-Ciamarra, U., Ahuja, V. & Gustafson, D. 2009. *Supporting livestock sector development for poverty reduction: Issues and proposals*. FAO-PPLPI Research Report 09-01. Rome, FAO.