INNOVATION CAPACITY AND THE ELUSIVE LIVESTOCK REVOLUTION

The late 1990s. For livestock policy, development or research experts, a period to look back with some fondness. After all, it was around this time that a group of economists from the International Food Policy Research Institute (IFPRI), the UN’s Food and Agriculture Organization (FAO) and the International Livestock Research Institute (ILRI) finally managed to articulate — and calculate — convincingly what those in the field had always known: the importance of livestock to economic and rural development:

“A revolution is taking place in global agriculture that has profound implications for human health, livelihoods, and the environment. Population growth, urbanization, and income growth in developing countries are fueling a massive increase in demand for food of animal origin. These changes in the diets of billions of people could significantly improve the well-being of many rural poor. Governments and industry must prepare for this continuing revolution with long-run policies and investments that will satisfy consumer demand, improve nutrition, direct income growth opportunities to those who need them most, and alleviate environmental and public health stress.” (Delgado et al, 1999).

Ten years on, many of the demand and production projections in the IFPRI/FAO/ILRI report have, in broad numerical terms, proved

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FOOD PROJECT FEATURE

The September 2009 edition of Capacity.org — a web-magazine/portal intended for practitioners and policymakers who work in or on capacity development in international cooperation in the South — features a guest editorial on the LINK-ILRI Fodder Innovation Project, titled "Tools, Principles or Policies: Agricultural Innovation System Capacity Development".

Using experiences from the fodder project, authors Andy Hall, Rasheed Sulaiman V., Tesfaye Beshah, Elias Madzudzo and Ranjittha Puskur develop some broad principles that others can use to help facilitate capacity development. This is a challenge, as it is long-standing practice to separate them. More details on the fodder experiment can be found on www.innovationstudies.org or on http://www.fodderinnovation.org.

GLOBAL FORUM PLANNED

Head of LINK's South Asia hub, Dr. Rasheed Sulaiman V., participated in the 15th Annual Consultation Meeting of the Neuchâtel Initiative in Assisi, Italy on September 19-22. Hosted by FAO, the meeting brought together 50 participants from over 20 countries.

The meeting was organised to discuss the establishment of a new global forum on rural advisory services (GIRAS). Participants discussed a proposed structure, while agreeing that GIRAS should not be a membership organisation but a platform with broad participation of public and private stakeholders, for whom agricultural advisory services are a central part of their work. GIRAS will be launched in March 2010 and is expected to be fully operational by November 2010.

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correct. But, although spectacular in countries like China, India and Brazil, most other developing countries have seen only marginal growth in livestock production; most of sub-Saharan Africa has, at best, been stagnant. Despite rapid increases in population and urbanisation almost the world over, only those developing countries that simultaneously enjoyed significant economic growth experienced the large increases in consumption of livestock products that the study predicted. For example, consumption of pork and poultry increased in China; of milk in India; and of poultry, again, in Latin America.

In line with trends in production, per capita consumption of livestock products in sub-Saharan Africa, with a few exceptions (namely Kenya for milk, South Africa for poultry), remains very low, or has actually even decreased since the Livestock Revolution. And while total livestock production in developing countries will soon overtake that in developed nations, overall per capita consumption of livestock products in the former still remains significantly lower. In other words, the distribution of the benefits of the Livestock Revolution has been rather patchy, to say the least.

A REVOLUTION FOR WHOM?

Increased consumption and production of livestock are clearly not for small-scale livestock keepers, processors and market agents in developing countries. Given its role in the livelihoods of a majority of the world’s rural poor and given that livestock is one of the few commodities produced by small-scale farmers for which demand is growing, the suggestion at the time was that it could represent a potential pathway out of poverty. But has this been the case since?

Evidence from rapidly developing economies suggests that when alternative employment options arise and formal distribution networks for processed livestock products extend their reach beyond major towns and cities, small-scale livestock keepers exit the sector. Better remunerated and less risky opportunities in the urban construction, manufacturing or service sectors prove irresistible, especially to young people. As urban demand for livestock products grows, value chains become more complex and food quality standards increasingly stringent. More and more, this additional supply of livestock products is provided by larger-scale, more intensive and technologically-sophisticated producers, and in some cases importers.

In countries where economic growth has been less spectacular or sluggish, many small-scale ‘low-input low output’ producers continue to keep livestock, usually as a supplement to farming. They enjoy multiple benefits from their animals, including enhanced food and nutritional security, as well as draught power and manure supply to enhance crop production. Livestock also serves an important socio-cultural role, such as payment of dowry and traditional fines and as determinants of status. While mixed crop-livestock systems continue to make important contributions to the livelihoods, incomes — livestock production generally generates up to one-third of income — and food and nutritional security of the rural poor, the proposition that these type of producers would be able to tap into the new markets has, generally, not materialised. In many of these cases, livestock is an expression of poverty, rather than a pathway out of poverty.

THE LIVESTOCK LADDER

Thus, on current evidence, it appears that the ‘livestock ladder’ — the process by which small-scale traditional keepers could gradually intensify and scale up their production, and, in doing, so use livestock as ‘pathways out of poverty’ — is largely mythological. The ‘ladder’ seems to have rungs at the bottom and top only, with a yawning, generally insurmountable void between the two. This is not to underplay the importance of livestock to hundreds of millions of the world’s poorest inhabitants — acting as a safety net and helping to prevent them falling into abject poverty.

But the idea that significant numbers of poor and small-scale producers can somehow make the transition from subsistence farming and petty trading in the local arena to tapping into the increasing urban demand associated with the Livestock Revolution has thus far remained just wishful thinking. Transitioning from subsistence to small-scale commercial does not only open potential access to more lucrative markets, it also exposes such producers and enterprises to rising competition in the global marketplace, market shocks, and changing consumer demands, standards, and norms in distant markets. The ever-increasing rate of change in these markets means that responsiveness to changing contexts and conditions is essential to be able to thrive. Without such capacity, producers and enterprises are unlikely to cope and prosper.

THE LIVESTOCK SLIDE

The reverse has proved equally fictitious. A ‘livestock slide’ — the process by which it has been suggested that small-scale livestock keepers would be squeezed out of the market into destitution — is also largely mythological. In countries where the Livestock Revolution has occurred, such new markets are generally supplied through new production or imports that do not generally compete with informal systems or subsistence production. In addition, because the Livestock Revolution is driven primarily by economic growth, agriculture’s contribution to GDP and employment tends to decrease in rapidly-developing economies, with growth fuelled by construction, export-oriented manufacture and service industries.

What is undoubtedly true, however, is that those countries in which the Livestock Revolution has taken off, a widening gulf is

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ongoing between a diminishing, smallscale traditional sector at one extreme, and a growing, large-scale intensive sector at the other.

ONGOING TRENDS?
The architects of the Livestock Revolution concept made their predictions based on the assumption that the era of cheap food would continue. The real price of staple foods had been generally declining since the 1950s and they anticipated this trend would continue. They were not alone in this belief; as recently as 2005 a joint OECD-FAO report forecast that, in real terms, the prices of various agricultural commodities (including cereals and livestock products) would decrease over the next decade.

No-one can have failed to notice, however, that beginning in 2002, accelerating in 2005, and peaking in mid-2008, global food, fuel and other commodity prices shot up. Media reports were quick to announce that “the long era of cheap food is over”. Agricultural and non-agricultural commodity prices, including oil, are now significantly down from the heady peaks achieved in early-mid 2008. The ongoing global financial crisis and recession has dampened demand and tempered growth. It is difficult to forecast what will happen in the future regarding feed and food prices. Most analysts and observers, however, believe that in the short-to-medium term, prices will remain higher than in the recent past, and that increased price volatility will become the norm.

A number of livestock sector missionaries have seized upon these recent developments in the food and financial markets as additional ammunition in their crusade. Whether prices remain high or revert to the long-term decreasing trend of the past 50 years or so, the polarisation of the livestock sector in the developing world looks set to prevail. Let’s take a look at the following two extreme scenarios:

- **Scenario 1: Staple food and feed prices remain high.**
  This might mean additional pressure to supply meat, milk and eggs at the lowest possible prices to meet the demand of urban consumers. This is likely to increase the trend towards larger, more intensive and more efficient production units, especially for poultry. In this scenario, production by poor, smallscale livestock producers becomes even more important in terms of food and nutritional security, as their purchasing power in local food markets, as well as that of their customers, decreases. While there may be possible short-term market opportunities for smallholders, resource constraints and the exposure to the rigors of the marketplace are likely to limit these to a select-ed few.

- **Scenario 2: Feed prices start to decrease again.**
  This may be accompanied by decreases in the price of livestock products and other foods, which is likely to further boost demand for cheap meat, milk and eggs, and stimulate further expansion of the largescale industrial livestock sector.

In neither scenario is it possible to see how smallscale poor producers can become integrated into increasingly complex, formal supply chains. Accepted sector wisdom, however, remains stubbornly dominated by ‘smallholder romanticism’: a narrow approach that only focuses on smallholders, rather than exploring the type of capacity that is needed to allow producers to innovate.

THE EVOLUTION OF THE REVOLUTION

Global population is estimated to eventually peak in the 9-11 billion range, which is projected to occur at some point during the second half of the 21st century. China is expected to increase from its current 1.3 billion population to a peak of around 1.6 billion by 2050, while India is forecast to overtake China as the world’s most populous nation just about that time.

The UN considers trends towards increasing urbanisation “unstoppable”. Currently, more than half the world’s population lives in towns and cities. By 2050 around 7 out of every 10 people are expected to be urban dwellers. However, these figures will vary across regions; the proportion of the population living in towns and cities by 2050 will, however, vary between regions, ranging from 54% in Asia and 19% in Africa.

While population growth and urbanisation are important, income growth is generally considered to be the strongest driver of increased consumption of livestock products. Notwithstanding the deep recession in most of the “advanced” economies, the IMF forecasts that growth in emerging economies will be positive, though lower than in recent years, with the global economy expected to start expanding.
strongly again from the second half of 2010. These short and longer-term projections in population growth, urbanisation and economic growth suggest that the trend in increased consumption of livestock products in developing countries is likely to continue.

A LIVING FROM LIVESTOCK: LESSONS FOR BUILDING INNOVATION CAPACITY

So, what does the above tell us about the kind of innovation capacity that needs to be built up to support a living from livestock? In a sector where rapid (and often unpredictable) change in market, technological, social and environmental circumstances calls the tune, policy and development interventions need to support processes that generate new services, products, and production arrangements that satisfy society’s social, economic and environmental goals. Such locally-specific innovation in livestock production, processing, utilisation, and distribution takes place when different players in the sector are well-networked together, allowing them to make creative use of ideas, technologies and information from different sources, including research. Building this capacity will thus be essential in mediating how the livestock sector develops, how livestock keepers fare, and how well the needs of consumers are met.

Livestock will remain important to the livelihoods of a large part of the rural poor, fulfilling a number of different roles, from income generation and the provision of inputs into mixed cropping systems, to a buffer against shocks. Wherever rural poverty persists and non-farm employment options remain limited, such smallscale, mixed crop-livestock systems will persist. In these poorer ‘Non-Livestock Revolution’ zones, policies and institutional changes that reduce economic vulnerability — while minimising risk from zoonotic and foodborne diseases and environmental hazards — need to be supported.

Growth in demand for livestock products in parts of the developing world has thus far been accompanied by an increase in large-scale commercial production. Smallholders have found it much more difficult to take advantage of the opportunities provided by an expanding sector. Nevertheless, smallholder producers stay in business when they can benefit from different forms of collective organisations, support networks and services, and when the opportunity cost of family labour remains low and/or alternative employment opportunities are limited. India’s and Kenya’s dairy sectors are two specific, albeit diverse, cases in point.

In areas where economies are beginning to take off, managing the transition of the livestock sector requires a mix of policy, institutional change, technology, and investment. Building locally-specific capacity that can respond to change is particularly important.

Thus far, the potential for the great majority of poor smallscale producers to supply formal value chains appears to be limited by a number of factors. These include lack of own funds to invest or access to credit; small and diminishing land holdings; poor access to input and output services and markets; increasingly stringent food and safety standards; the growing power of supermarkets; and poor knowledge access and infrastructure. Even if the above-mentioned capacity can be supported and built up, there is still the question of managing the exit of a large majority of former livestock keepers from the sector and into more lucrative jobs elsewhere. This could be achieved, for example, by ensuring schools and colleges equip students with the new skills these industries require, or by providing suitable training opportunities to those who have already left the formal education system to enable them to adapt to the new reality.

In rapidly developing economies, as the livestock sector becomes increasingly dominated by large-scale integrators, institutional changes need to ensure public health and environmental standards are upheld. In some nations, for example, the introduction of punitive taxation regimes was one factor that caused largescale poultry enterprises to relocate further from cities, thereby reducing public health and environmental risks caused by having large concentrations of livestock and people in close proximity.

The objective of pro-poor livestock sector development interventions in these scenarios should now, however, be to punish largescale production, nor to maintain smallholder production systems at any cost. Rather, it should mediate sector transition. At all levels, innovation capacity that safeguard the interests of the diminishing numbers of poor livestock producers, processors and market agents, and of the increasing number of, largely urban, poor consumers, will be necessary. This ability to mobilise and use knowledge is replacing the traditional importance of natural resource endowments as a source of competitiveness for developing countries. It is also increasingly important in determining how countries cope with climate change, human and animal disease outbreaks, and how they seize opportunities arising from new technological and policy opportunities. Thailand is just one good example of this adaptive capacity. Within months of losing its large export market for frozen poultry — due to an outbreak of avian influenza — it had re-engineered and reinvented itself as a major exporter of pre-cooked, poultry-based ready meals.

Building the necessary mechanisms and institutional capacities to predict, prevent and rationally respond requires significant revision of the paradigms that have, thus far, dominated sector thinking. With agriculture firmly back on the development agenda, it is now time to learn the lessons from 10 years of Livestock Revolution. Without significant and sustained innovation in national and global livestock systems, the potential of the sector to contribute to poverty reduction, economic growth and global food security will not be achieved.

REFERENCES:


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