Development practitioners are increasingly aware that production-oriented interventions at farmer level achieve only limited outcomes if market development does not also happen. Value chain approaches are thus used more and more to better link production with markets and services. This approach can be seen as a successor to ‘farming systems’ approaches of the 1980s, which addressed the integrated nature of rural agricultural economies but did not adequately incorporate forward and backward linkages that drive product demand and supply technology and inputs. Value chain approaches aim to remedy that gap.

Livestock value chains have some unique and challenging features, such as perishable or live products, high levels of regulatory attention to food safety and livestock disease transmission, high-cost product transformation to achieve tradable form, and difficulties to deliver perishable inputs such as some animal health and genetics services. Importantly, most livestock products in developing countries are still channeled through informal domestic markets comprising small scale actors employing traditional methods of processing and handling.

ILRI principles for pro-poor market development

- Increase market access (volume, value, reliability) especially for resource-poor, smallholder livestock producers;
- Provide increased access to women and marginalized groups, possibly even new roles;
- Is not just about producers: it is also about small scale market agents, and value addition along the supply chain;
- Focus on the dominant markets serving the poor, mostly informal and domestic;
- Provide improved access by poor consumers to low cost and safer livestock products;
- Drive productivity increases on farm.

More generally, developing-country livestock systems are characterized by marketing over great distances, climatically-sensitive phases of reproduction, weight gain and lactation, multiple non-market uses and interactions with crop production and other economic behavior. Livestock are assets to the rural poor, and are an integral to risk management. There are many levels of livestock traders and transactions, various steps and stages of processing, and various employment-creating services and input supply.
Pro-poor livestock development is thus a complex challenge. ILRI’s pro-poor focus requires that we differentiate our outcomes and impacts from those of others who more broadly promote market and supply development, and economic efficiency and growth.

The principles we apply differentiate our target beneficiaries (smallholders, women, marginalized groups), include small scale traders and poor consumers, and include as impacts both access to safer food, and increased productivity.

Understanding smallholder livestock marketing

Livestock-owning smallholder and informal markets are the focus of much of ILRI’s work, not only because they are numerous in the market but also due to the effectiveness with which informal markets can be served by smallholders (Staal, 2006). Initially we targeted market participation in extensive systems (‘off-take’ and volumes sold): Negassa and Jabbar (2008) defined measures for off-take and examined factors influencing it in Ethiopian sheep and cattle systems.

They showed that certain technologies (including improved genetics) and effective extension were key factors in off-take. However, when patterns of adoption were studied in detail, drivers of uptake and their connection to market access were found to be complex (Baltenweck and Staal, 2007).

An innovative aspect of ILRI’s work on value chains is the focus on development outcomes by way of employment generation. The concept was not new, however, while earlier work focused on employment at farm level, our work demonstrated the significance of markets themselves in employment creation (Staal et al., 2008).

Given their dominance in most livestock product markets in our target regions, the behavior of traders and other informal market actors has been the subject of recent ILRI research. This has focused our research agenda on the poor and smallholders, and brought ILRI into contact with new development actors.

ILRI approaches to address livestock value chains

A recent ILRI study found that targeting multiple value chain stages has a positive influence on successes achieved in pro-poor livestock development (Baker and Wanyoike, 2011). This result reinforces the approach taken in the new CGIAR Research Program 3.71, which focuses on every stage of the value chain in a restricted number of countries and livestock products.

An early advantage in this is ILRI’s ability to conduct rapid ‘whole-chain’ appraisals. This gave us a foothold in several livestock commodity sectors, including pigs in South and Southeast Asia (Deka et al., 2007; Lapar et al., 2010); dairy in Kenya (Omore et al., 2004) and beef in Ethiopia (Sintayehu et al., 2011). These appraisals emerged from earlier ILCA and ILRI ‘market characterization’ templates and studies developed in the 1990s, and dairy ‘sector characterization’ in numerous countries (Ibrahim et al., 2003 in Sri Lanka).

We have used this experience to develop more targeted and nuanced value chain approaches, focused on specific issues such as disease impact or value addition performance in a broader value chain framework. Our work on Rift Valley Fever (Rich et al., 2009b) used value chain analysis to track and measure impacts from an epidemiological and economic perspective, and to identify critical control points for disease entry and spread. We also used practical measurement and use of key value chain indicators, such as value addition, in the development of a value chain analysis software ‘VAIMS’ (Baker et al., 2009). Development of a more standardized set of tools is central to ILRI’s involvement in CRP 2.2.

Addressing value chains as conduits of market signals and of value addition requires different approaches to conventional analysis of markets, or of single-stage production and technology issues. A recent paper (Rich et al. 2011) places this challenge in the context of livestock value chains. Modeling approaches were identified to take better account of value chain complexities and dynamics, along the various stages of the value chain. The paper calls for empirical applications, particularly to rank interventions and to understand and promote innovation.

1 More Meat, Milk and Fish by and for the Poor
2 “Policies, Institutions, and Markets to Strengthen Food Security and Incomes for the Rural Poor”
**Innovation systems and platforms**

The innovation systems approach is one way to understand behavioral changes that may lead to improved performance and greater benefits for actors. This focuses on the ability of actors to learn and develop strategies that benefit them. The Innovation Systems framework provides a systemic, institutional and multi-stakeholder perspective and focuses on non-linear knowledge transfer processes, institutional learning, the complex and conditional interactions among stakeholders, and the role of institutions and policy frameworks (Muradian et al., 2011).

**Innovation Platforms – experiences, lessons and outcomes**

Lessons emerging from these experiences highlight that:

- Appropriate technology introduced through existing stakeholders is a useful catalyst to address system constraints.
- Long periods are needed to facilitate platforms and build innovation capacity: even longer to inform policy.
- Innovation processes require established, credible, trusted and functional organisations for several critical roles (broker, connector, catalyst).
- Support from local authorities and leaders (formal and informal) is critical.
- Sustainability requires understanding of actors’ various incentives, and demonstration of quick wins.
- Conventional M&E is inadequate, new and relevant methods and tools are needed, particularly in managing outcomes.
- Project management needs to be flexible to accommodate emerging opportunities and challenges.
- Engaging policy actors from the beginning helps in finding windows for influence and ownership for research results.

Recent ILRI research brings the value chain and innovation systems frameworks together to address livestock development challenges (Anandajayasekeram and Gebremedhin, 2010; McDermott et al., 2010). Across many countries, ILRI’s work includes innovation in feeding systems, input and service provision, linkages to distant markets through trader networks, and integration of crop and livestock systems in West Africa.

We have piloted partnerships among value chain actors to boost innovation. This ‘Innovation Platform’ structure facilitates enhanced innovation capacity through continued access to knowledge, information, and inputs and services, while enhancing market linkages and providing a value addition focus to exploit market opportunities.

**Service hubs**

Improved producer performance relies on access to reliable and affordable services and inputs. Service hubs, which aggregate (locationally and institutionally) multiple output and input services, are structures that may offer a low-transaction-cost environment and some economies of scale. This in turn enables market access. The Hub approach is central to the East Africa Dairy Development Project (EADD).

“Dairy hubs serve as community anchors for industry knowledge, business services and market access. Fully functioning, the dairy hub is a dynamic cluster of services and activities that generate greater income for dairy farmers”

(EADD proposal).

The hubs facilitate the emergence or strengthening of business networks and provide a platform that input and service providers can use to reach smallholder farmers and other Value Chain actors. Hubs differ from cooperatives and associations in their flexibility, variety and (in some cases) informality of status, and in their capacity to provide services from both in-house and external sources. Different types of hubs have been set up in the EADD. Some are centered around milk chilling plants of varying ownership (farmer- or processor-owned). Others are enhanced traditional marketing hubs with no chiller. Some 160,000 small scale dairy producers now use these hubs. The project employs an innovative ‘check-off’ system for farmers to get inputs and services at the hub, with payment subtracted from milk revenues.

**Lessons from the functioning of hubs**

- Raising equity from farmers requires care regarding disclosure, transparency and ownership.
- Dogmatic approaches to organization should be avoided, in favour of efficiency and local control.
- Producer performance must retain primacy.
- Local banks can play multiple productive roles.
- It may not be possible to control hub evolution within development projects.
- Vested interests emerge, threatening member ownership.
- Involvement of a respected third party (government in the EADD case) is critical for farmer mobilization.

ILRI is exploring ways to use this approach in small ruminant systems (Mali and Ethiopia) and cattle and goat systems (Southern Africa). Although they do not feature physical anchors in the form of a chilling plant or collec-
tion center, they will be a focus for services and value chain coordination in marketing. Much work on hubs is still needed, on appropriate bundling of services and on their local economic and societal effects.

**Business Development Services**

Just as large private sector actors are recognized as potential catalysts to provide services to producers and upgrade value chains, ILRI looks at opportunities within small scale local markets to improve informal markets and market actors’ capacity to upgrade value chains, provide better services to clients and deliver higher quality and safer products to consumers. This requires a change in mind-set away from the ‘evil middlemen’ to recognize their important roles.

**Applying the Innovation in a Quality Assurance Scheme Involving Business Development Services (BDS)**

The Smallholder Dairy Development Project (www.smallholderdairy.org) in Kenya piloted an innovative BDS effort to work with small-scale milk traders through practical training that allowed them to increase levels of milk safety and quality, and to conduct business more effectively. By closely involving the Kenya Dairy Board (KDB), the training was endorsed and third-party agencies were certified to supply training across Kenya.

Sustainability was achieved through traders’ payments for training. Some 40,000 small-scale milk vendors benefited, with estimated annual gains to the Kenyan economy of US$ 33 million, of which $16 million accrued to smallholder producers (Kaitibie et al. 2010). The system is now being adapted and piloted by ILRI in Uganda, Tanzania, and India’s Assam State.

**Conclusions**

This widespread and rapid adoption of value chain approaches has revealed significant gaps in theory and application. Economic and social theory is yet to be applied fully to explain sales decisions and choices of trading channels and partners in the value chain. ILRI has contributed to formalizing value chain analysis in terms of developing performance measures, tools to employ them, and by piloting interventions for value chain upgrading such as BDS and innovation platforms. Further advances are a major element of our engagement in CRP 2.

The sustainability of market-led development outcomes relies on private sector engagement. ILRI’s current work in attracting the private sector (including service and credit providers) to the hubs has been achieved for dairy, and future work targets other livestock species and products. This provides increased scope to test and demonstrate the hub concept more widely. Key challenges remain to effectively evaluate hub performance for individuals and communities, and then to scale up the role of collective action in hub design and operation. The extent to which the changing business environment is translated into increased private sector involvement in smallholder value chains remains to be seen.

**References**


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On 9 and 10 November 2011, the ILRI Board of Trustees hosted a 2-day ‘liveSTOCK Exchange’ to discuss and reflect on livestock research for development.