

1. Introduction

An estimated 2.6 billion people in the developing world have to make a living on less than \$2 a day (Chen and Ravallion, 2008). Of these, about 1.4 billion people are extremely poor, surviving on less than \$1.25/day. Asia harbours the majority of the extremely poor, with 933 million, while the incidence of extreme poverty is highest in sub-Saharan Africa, at one in two people (50 percent) (Chen and Ravallion, 2008; World Bank, 2007). Poverty is intimately associated with undernutrition; FAO estimates that globally about 925 million humans were undernourished in 2010 (FAO, 2010c).

As well as ethical concerns, economic considerations and enlightened self-interest should put the reduction of poverty high on the global agenda:

- The poor are as efficient as the non-poor at making use of their resources, as first argued by Nobel Laureate Theodor W. Schultz (1964) in his classic book *Transforming traditional agriculture*. For example, on average, smaller farms achieve higher land productivity than their larger-scale counterparts (Barrett, 1996; Heltberg, 1998; Pender *et al.*, 2004; Wiggins, 2009), a phenomenon referred to as the “inverse productivity relationship”, partly because farmers working on their own fields appropriate the full benefits of their efforts, whereas agricultural labourers obtain a fixed wage independent of output level (Hayami and Otsukam, 1993).
- It has been demonstrated that in today’s world, investments have higher returns in less-favoured areas, which are also home to the poorest segments of humanity, mainly because investment opportunities have begun to decline in more developed areas (Fan and Chan-Kang, 2004; Fan and Hazell, 2001).
- Societies with low and stagnant incomes are significantly more prone to violent conflict and civil unrest than their wealthier counterparts. Local conflicts often assume international dimensions, and the annual global cost of civil war has recently been estimated, conservatively, at USD 100 billion (Collier, 2007) – far more than total global aid.
- Public health systems in poor countries are normally weak, and the poor tend to be disproportionately more affected by diseases, many of which are contagious (Gwatkin, Guillot and Heuveline, 1999). Consequently, poverty is an important factor for disease emergence, maintenance and amplification, with potential repercussions at the global level, in both high- and low-income societies.

To achieve rapid advances in poverty reduction, interventions need to be well targeted so that they spur economic growth to which the poor contribute and from which they benefit. Nearly three-quarters of the extremely poor, about 1 billion people, live in rural areas (World Bank, 2008) and most of them – about 90 percent according to Lipton (2005) – are small-scale farmers depending directly on agriculture as part of their livelihoods. Despite growing urbanization, the majority of the world’s poor will continue to live in rural areas for some decades to come; it has been estimated that more than half of the “dollar-poor” will reside in rural areas until about 2035 (Ravallion, Chen and Sangraula, 2007; UN, 2007).

Given that rural agrarian populations in most developing countries will continue to grow for at least another ten to 15 years (up to 30 years in the least developed countries) (UN, 2007), and land for sustainable agriculture cannot expand at the same rate, agricultural production cannot easily be expanded “horizontally”. As a consequence, an essential means of raising rural incomes and improving food security is through productivity gains and/or diversification into high-value agricultural products, leading to enhanced income through increased value of output per area of land and, more important, per unit of labour input.

Diversification into livestock, and increasing livestock productivity should form part of strategies for poverty reduction and agricultural productivity growth in developing countries, because a large share of the rural poor keep livestock as contributors to their livelihoods (FAO, 2009b; LID, 1999; Thornton *et al.*, 2002) and because livestock have a variety of characteristics that make them important contributors to sustainable rural development. Livestock provide high-quality food and marketable products that can be produced by small-scale farmers and are generally of higher value and less vulnerable to climatic shocks and critical harvest timing than many crops. Livestock also increase crop production, by providing draught power and manure; enhance labour productivity, by reducing drudgery and dependency on hand-tools, thereby freeing time for other production activities; and smooth labour demand across agricultural seasons. One of their most important roles is converting organic material not suited for human nutrition into high-value food and non-food products. Finally, livestock – especially small stock such as poultry, pigs, sheep and goats – are particularly important assets for rural women, whose role in agriculture is often unappreciated. From livestock, women can earn income that remains under their control, with implications for the intra-household allocation of food and resources. However, the unregulated growth of livestock populations may generate negative externalities: increased production of greenhouse gases (GHGs); pollution of soils and water sources from animal wastes; increased human health risks; and deforestation and unsustainable use of land resources for feedgrain production.

Development of the livestock sector in ways that capitalize on its positive effects while controlling the negative impacts could thus contribute substantially “to rais[ing] levels of nutrition, improv[ing] agricultural productivity, better[ing] the lives of rural populations and contribut[ing] to the growth of the world economy” (FAO, 2010b) and to achieving Millennium Development Goal (MDG) 1 of eradicating extreme poverty and hunger. However, the track record of livestock sector development interventions in promoting sustained poverty reduction is weak (LID, 1999), and although the rural poor have a major stake in the livestock sector, only a small minority of them have so far been able to take advantage of the opportunities provided by livestock sector development. This failure has to a large extent been due to a combination of national, regional and global-level policies, regulations, norms and values. These define the societal “rules of the game”, which create a poverty trap for the livestock-dependent poor by influencing both the behaviour of livestock keepers and the policy-making process. On the one hand, inadequately functioning markets and institutions often prevent the poor from making full use of their scarce assets and skills to escape poverty; for instance, because of unsecured or unrecognized property rights over land, houses and other fixed and movable goods, the poor cannot use their assets as collateral to obtain credit and invest in growth-enhancing technologies and enterprises (de

Soto, 2000). On the other hand, the rural poor, who are often dispersed and have poor means of communication, face high opportunity costs of collective actions and cannot afford not to work in order to participate in lengthy and time-consuming policy processes whose outcomes are not immediate and are uncertain at best (Binswanger and Deininger, 1997). Policies are thus rarely designed with their benefit in mind, thereby constraining the poor from making full use of their assets and abilities. Institutional weaknesses prevent the poor from taking full advantage of the development potential offered by livestock and the livestock sector.

The multiple dimensions of the livestock-poverty interface, including technical, policy and political economy aspects, have been addressed and debated in disparate contexts and from different perspectives (e.g., Ahuja and Sen, 2006; FAO, 2009a; Perry and Grace, 2009; Thornton *et al.*, 2007), but poverty has rarely been the entry point of analysis, and issues have been looked at predominantly from either the technical or the policy perspective. This has created difficulties for appreciating the intricacies of livestock-poverty relations and, consequently, for formulating policies that stimulate unambiguously pro-poor investments in the livestock sector. This book reviews the major aspects of the livestock-poverty interface with the objective of identifying the conditions under which livestock can be an effective tool for poverty reduction; the interventions that allow livestock's poverty-reducing potential to be unlocked, and in what contexts; and how sustainable implementation of these interventions can be facilitated.

The following chapter provides a brief overview of the extent and distribution of poverty in developing country regions and of changes in these over the past 15 years, and reviews the extent to which poor people are engaged in agriculture and livestock keeping. Chapter 3 examines the multiple roles that different types of livestock can play within households, and how these contribute to reducing vulnerability and increasing income. Chapter 4 explores the direct and indirect contributions that livestock can make to overall economic development, with particular emphasis on the agriculture-based economies in which most of the poor are found. As markets form a vital link between households and the wider economy, and their functioning is critical for sustainable development, Chapter 5 looks at markets' role in poverty reduction, and the constraints to market access that poor livestock keepers regularly face. Chapter 6 is based on a review of livestock policies implemented in a variety of developing countries, identifies common elements of successful and pro-poor livestock sector policies and institutional reforms, describes the political dimensions of policy and institutional changes that favour poor livestock keepers, and outlines strategies for overcoming opposing interests. Chapter 7 summarizes what has been learned about how livestock sector policy can be advanced in ways that confer tangible benefits to poor people, and provides conclusions on how to capitalize on livestock sector development to accelerate global poverty reduction.