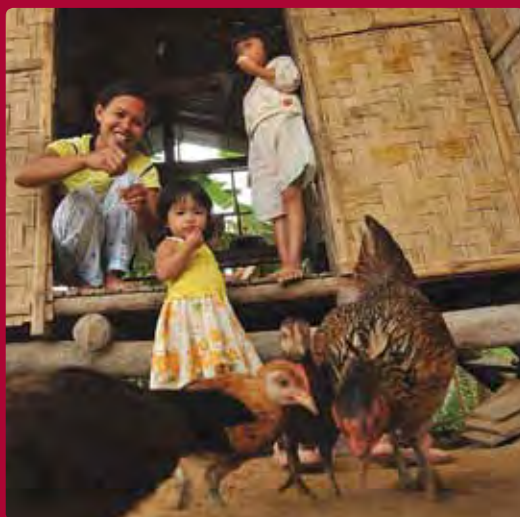
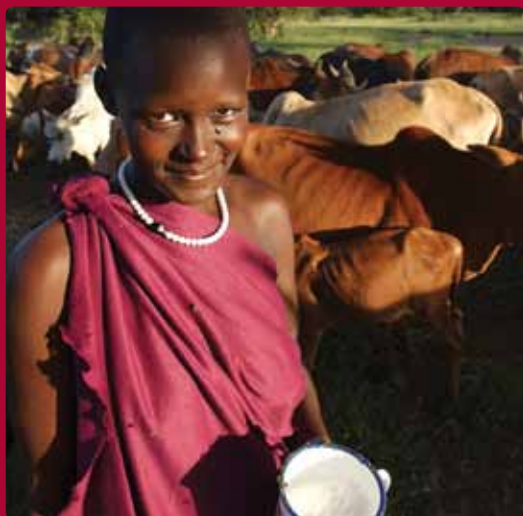


World Livestock 2011

Livestock in food security



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Livestock in food security

FOOD AND AGRICULTURE ORGANIZATION OF
THE UNITED NATIONS

Rome, 2011

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Contents

<i>Acronym list</i>	<i>viii</i>
<i>Overview</i>	<i>ix</i>
Livestock and global food security	1
Measuring food security	2
Six dimensions	2
Measures	4
Livestock food in the diet	8
Nutritional value	8
Livestock products in the diets of the poor	11
Livestock and food supply	13
Supply of animal source foods	13
Livestock contributing to crop production	16
Livestock and the food balance	21
Stability of food supplies	22
Access to food	28
Financial, human and social capital	28
Gender dimensions of access	31
Economic factors affecting choice of livestock source foods	34
Market access and food access	37
Key points on livestock and global food security	42
Three human populations – three food security situations	43
Livestock-dependent societies	44
Contributions and challenges to food security	45
Case study. Mongolia: the limits of the last place on earth	46
Prospects for livestock dependence	52
Small-scale mixed farmers	53
Contribution of livestock to food security	54
Constraints to expansion	57

Case study. Mixed farming in Nepal	58
Prospects for small-scale mixed farmers	63
City populations	65
Livestock products in the urban diet	66
Sources of livestock source food for urban populations	67
Prospects for livestock feeding urban populations	72
Key points on three populations	74
Livestock-dependent societies	74
Small-scale mixed farmers	75
City populations	75
Feeding the future	77
<hr/>	
Producing enough food	78
How much livestock source food will be needed?	78
Reducing waste	82
Building resilience	88
Water shortage	89
Human and animal health threats	89
Volatile markets for feed and livestock products	90
Building sustainable systems	92
Conclusions	94
Urban consumers	94
Producer–Consumers	95
A regional perspective	96
Who does what?	97
References	99
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List of Tables

Table 1	Number (millions) and share of undernourished people by region 1990 to 2007	5
Table 2	Average dietary protein and energy consumption and undernourishment by region	9
Table 3	Average daily consumption per person of livestock protein compared to safe level 1995 and 2005	10
Table 4	Changes in global livestock production total and per person 1967 to 2007	14
Table 5	Changes in global trade of livestock products 1967 to 2007	14
Table 6	Global livestock production average by production system 2001 to 2003	22
Table 7	Human-edible protein balance in the livestock production of selected countries	23
Table 8	Percentage of total income of rural households coming from livestock activities, by expenditure quintiles	29
Table 9	Percentage of total income coming from livestock activities, by sex of household head and expenditure quintile	32
Table 10	Percentage of male and female rural households owning livestock in selected countries	56
Table 11	Number of landowners and landless households by geographical region of Nepal	59
Table 12	Percent of Nepali rural households owning livestock, by expenditure quintiles	60
Table 13	Percent of landowning and landless households by Tropical Livestock Unit (TLU) owned	60
Table 14	Distribution of TLU and typology of livestock, by expenditure quintiles	61
Table 15	Income total from livestock and from cropping (in Nepalese rupees)	61
Table 16	Projected total consumption of meat and dairy products Percent of million tonnes total consumption in developing countries	79
Table 17	Projected human population from 2002 and 2008 estimates	80
Table 18	Projected consumption of livestock products per billion people based on 2002 population estimates	80

List of Figures

Figure 1	Production from poultry and pigs in India, Brazil and China 1967 to 2007	15
Figure 2	Export of livestock products by region 1967 and 2007	16
Figure 3	Net trade per person in livestock products by year and region	17
Figure 4	Arable land area by year and region	19
Figure 5	Projections for chicken manure production in Viet Nam with changes in sector structure	21
Figure 6	Relationship between GDP per person and meat consumption per person per day in selected regions	35
Figure 7	GDP per person in current US\$ by country income grouping	36
Figure 8	Human population of Mongolia 1980 to 2007	47
Figure 9	Livestock population of Mongolia by species 1980 to 2009	47
Figure 10	Milk and meat production in Mongolia 1980 to 2005	48
Figure 11	Kilocalorie consumption per day in Mongolia by source 1980 to 2007	49
Figure 12	Percentage of Mongolian daily kilocalorie intake that is imported	49
Figure 13	Mongolian livestock herds below three critical sizes	50
Figure 14	Rural households in selected countries engaged in mixed farming	54
Figure 15	Land size among landowner households of Nepal	59
Figure 16	Type and average number of livestock owned by mixed farming and livestock-only households in Nepal	60

List of Boxes

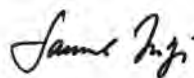
Box 1	Four pillars of food security	3
Box 2	Dealing with protracted food crisis: the case of Ethiopia	4
Box 3	Costs of malnutrition	6
Box 4	Expansion of animal traction in Africa	18
Box 5	Natural and economic shocks to food systems	24
Box 6	Informal marketing of dairy products in South Asia, East and West Africa	39
Box 7	City livestock in the USA	68
Box 8	Food and biogas production in Shanghai	71
Box 9	Drivers of disease and possible responses	91

Foreword

Feeding the world's poor is one of the most pressing challenges of the present day, as human populations grow and put increasing strain on natural resources. Livestock have an important part to play, as they provide high-quality protein to consumers and regular income to producers. To fulfil their potential sustainably, they must be managed with care. Water, fossil fuel and grain are used in rearing animals, and there is an urgent need to use these resources more efficiently, to recycle and reduce waste, and to create a positive balance sheet in livestock's contribution to global food supplies.

One of the hardest challenges for food security is ensuring that all who need food have the means to buy it, particularly when volatile economies and natural disasters make already weak livelihoods even more unstable. Here livestock make a vital contribution as generators of cash flow and economic buffers, provided that market chains are organised to provide openings for small scale producers and traders and those in remote areas.

Livestock perform a variety of functions in different human societies. Communities dependent on livestock, those who practice mixed farming on a small scale, and consumers in cities, each have specific demands on farm animals and their products and distinct food security concerns. Different geographical regions also have their own perspectives, with the emerging economies acting as growth engines and the developed countries driving food safety and environmental regulations. All share a need for food systems to be sustainable and resilient. Each region and type of community will have an influence in shaping livestock's contribution to the food security of the future.



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Acronym list

ACI	Agrifood Consulting
ABARE	Australian Bureau of Agricultural and Resource Economics
BFREPA	British Free Range Egg Producers Association
BMI	Body mass index
BSE	Bovine spongiform encephalopathy
CBPP	Contagious bovine pleuropneumonia
CFS	Committee on World Food Security
COMESA	Common Market for Eastern and Southern Africa
EC	European Commission
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FMD	Foot-and-mouth disease
FARM-Africa	Food and Agriculture Research Management-Africa
GDP	Gross domestic product
Hh	Household
HPAI	Highly pathogenic avian influenza
ICASEPS	Indonesian Center for Agro-socioeconomic and Policy Studies
IFAD	International Fund for Agricultural Development
IGAD	Intergovernmental Authority for Development (East Africa)
IMF	International Monetary Fund
Kcal	Kilocalorie
LEAD	Livestock, Environment and Development
LEGS	Livestock Emergency Guidelines and Standards
MDG	Millennium Development Goal
N	Nitrogen
NDDB	National Dairy Development Board (India)
OECD	Organisation for Economic Co-operation and Development
OIE	World Organisation for Animal Health
P	Phosphorus
PRSP	Poverty reduction strategy paper
RIGA	Rural income generating activities
RVF	Rift Valley fever
SFU	Sheep forage unit
SOFA	State of Food and Agriculture
TB	Tuberculosis
TLU	Tropical livestock unit
UNFPA	United Nations Population Fund
UNSC	UN Standing Committee on Nutrition
UNU	United Nations University
WHO	World Health Organization
WFP	World Food Programme

Overview

Although much has been said about livestock's role in achieving food security, in reality, the subject has been only partially addressed and no current document fully covers the topic. This report is an attempt to fill the gap.

It expands the 2009 State of Food and Agriculture (SOFA) (FAO, 2009b) section which examined the multiple roles played by livestock in the food security of the poor and advocated for support of smallholders, both in responding to opportunities in livestock production and in finding other opportunities within a broad rural development strategy.

Recognizing that food security is central to international development – and to the mandate of the Food and Agriculture Organization of the United Nation (FAO) – the report tells the story of livestock and food security from three perspectives.

LIVESTOCK AND GLOBAL FOOD SECURITY

The first section of the report presents a global overview, examining the role that livestock play in various dimensions of food security. It describes the place of livestock products in human nutrition, the contribution of livestock to the world food supply and its stability, and it discusses the way that livestock can affect food access, particularly for poor families, as a direct source of food and a source of income.

“**Measuring food security**” explains the ways that food security is defined and measured, and provides an overview of trends in food security worldwide and by region. It is intended as background for those not familiar with the subject.

“**Livestock food in the diet**” describes the place of livestock products in human nutrition. Noting that the definition of food security includes the need for an “adequate diet”, it discusses the positive contributions that livestock

products can make to the diet and the possible consequences of over consumption.

“**Livestock and food supply**” describes the contribution of livestock to the world food supply, directly through production of meat, milk and eggs, and indirectly through supplying traction and manure to cropping. It examines the factors that cause food supplies to become unstable and ways that livestock can mitigate damaging effects. It also reviews the causes of instability in the supply of livestock source foods.

“**Access to food**” deals with food access, examining the way livestock can improve household and individual access to food, particularly for poor families, and provide food and income. It also reviews the impact of gender dynamics on access to livestock source foods within families and the ability of families to earn income from livestock.

THREE HUMAN POPULATIONS, THREE FOOD SECURITY SITUATIONS

The second section shifts from the global level to a human perspective, examining the way in which livestock contributes to the food security of three different human populations – livestock-dependent pastoralists and ranchers, small-scale mixed farmers and urban dwellers. The chapters briefly describe the main issues each population faces and then introduce related case studies to examine certain points in more practical detail.

“**Livestock dependent societies**” examines the situation faced by livestock-dependent societies, including pastoralists, who are the main focus of the chapter, and ranchers. In both systems, livestock provide the foundation of livelihoods and contribute to food security both locally and globally. Mongolia is used as a case study, because it has a long history of livestock dependence but, as in other livestock dependent socie-

ties, is changing in response to external pressures and new opportunities.

“Small-scale mixed farmers” focuses on small-scale mixed farmers for whom livestock provide both food and the means to obtain it. For these farmers, livestock are an important, but not necessarily the most important, part of their livelihood portfolios. The chapter reviews the contributions that livestock in these systems currently make to food security, the constraints to expanding their contribution and the prospects for small-scale mixed farming. Nepal is used as a case study because it has a large number of small-scale mixed farmers who face strong resource and market constraints and therefore provide a good illustration of the challenges they face in increasing production from their farms.

“City populations” considers the case of city populations, growing in number worldwide. For the inhabitants of large cities, animal products are essentially a commodity to be consumed – unlike the livestock-dependent and small-scale mixed farmers who are both producers and consumers. The chapter considers the place of livestock products in the urban diet, the logistics of feeding city populations, and the factors driving the livestock production systems and market chains that supply cities. It compares the approaches taken by different countries, drawing the most detailed information from China and the United States of America (USA), which define their “foodsheds” – the surrounding area that can provide food for a city – in two very different ways.

FEEDING THE FUTURE

The final part of the report looks to the future. It discusses the expected demand for livestock source food and the way that increased demand can be met with ever more limited resources. It reviews the drivers that led to the livestock revolution, how these have changed and what the implications will be for livestock contributing to food security.

“Producing enough food” considers the task

of producing enough food for future populations. It reviews FAO’s projections of growth in demand for livestock source foods between 2010 and 2050, discusses the assumptions that were made in these calculations and the implications of any changes. It argues that reducing various forms of waste in livestock food systems will be an essential component of meeting future demand. Returning to the three populations of the previous section, it reviews where the emphasis may lie for each one in reducing waste and increasing efficiency.

“Building resilience” looks at the possibilities for improving resilience in livestock food systems and the increasing concern about the instability of food supply and access during what are termed “protracted crises”. Livestock food systems must be prepared to respond to these crises, which will require building an increased capacity to deal with change and recover from shocks. The chapter reviews some of the factors that may create vulnerability in livestock food systems and suggests ways to mitigate them.

“Conclusions” summarizes the main messages of the entire report. It concludes that livestock make a positive contribution to food security but, at the same time, suggests that livestock need to be managed carefully to avoid externalities.