Livestock and Poultry Production
Management and Planning

Ramesh Nandan

Livestock play a vital role in the agricultural and rural economies of the developing world. Not only do they produce food directly, they also provide key inputs to crop agriculture. Most farms in the developing world are too small to justify owning or using a tractor, and the alternatives are animal power or human labour. The global livestock sector is rapidly changing in response to globalization and growing demand for animal-source foods, driven by population growth and increasing wealth in much of the developing world. The rapid rate of urbanization seen in many countries is not only linked to growing affluence but also gives rise to changes in people's food preferences; usually tending towards greater convenience and higher standards of safety. As well as the many benefits and opportunities associated with rapid sector transformation and growth, they are also associated with social, environmental and public health risks. This comprehensive text covers all types of farm animals and provides detailed information on each species.

Ramesh Nandan has obtained his Master in Veterinary Science from Patna Veterinary College, Patna. He has been associated with many co-operative society, like Sudha, for more than ten years. Mr. Nandan has attended several seminars and workshops all over the world. His thirteen research papers have been published in reputed journals. He has also authored two books.

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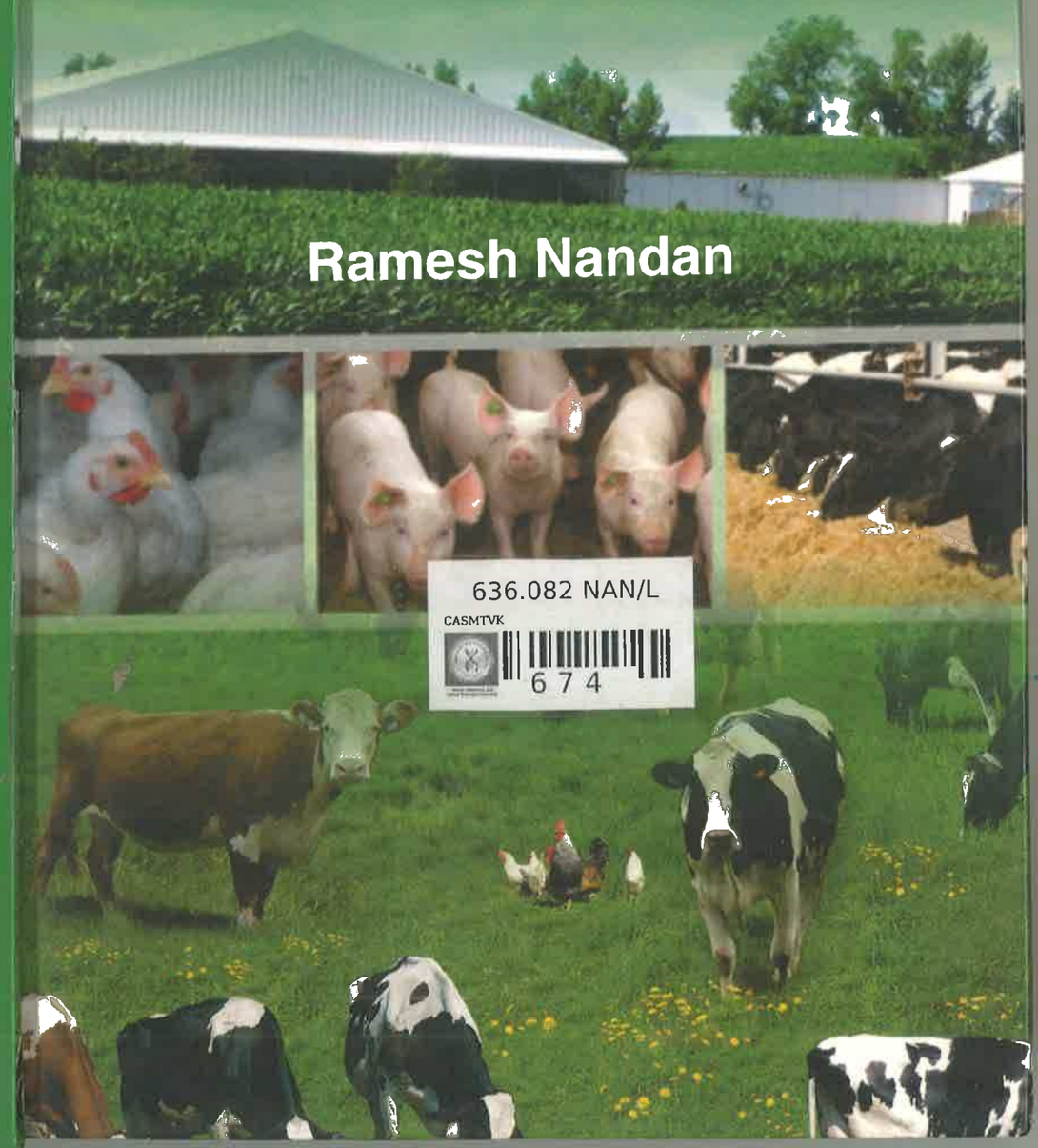

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Contents

Preface

Livestock have an image problem in the developed world. They are blamed for everything from global warming to increasing heart disease. Britain's 'mad cow disease' - or bovine spongiform encephalopathy - hasn't helped. Livestock are seen as wasteful, growing fat on grain that people could eat and polluting the environment with their faeces and urine and the gases they give off. But these charges are not true of livestock in the developing world. True, ruminants produce methane gas, one of the 'greenhouse gases' - but methane from ruminants accounts for only some 2.5 percent of the total greenhouse gases. Pastures grown to feed livestock take carbon dioxide out of the atmosphere, tying it up in plant material above and below the ground, just as forests do. True, eating too many animal products may increase the risk of heart disease - but this is a problem of the developed world, not the developing world. People in developing countries generally eat much less meat than those in the developed world, and the meat they eat is less fatty. Indeed, recent studies from Kenya, Egypt and Mexico show that children who do not get enough meat and milk in their diets may grow up physically and mentally compromised.

Livestock play a vital role in the agricultural and rural economies of the developing world. Not only do they produce food directly, they also provide key inputs to crop agriculture. Most farms in the developing world are too small to justify owning or using a tractor, and the alternatives are animal power or human labour. The livestock sector provides us with meat, dairy and eggs, as well as wool and leather. The global livestock sector is rapidly changing in response to globalization and growing demand for animal-source foods, driven by population growth and increasing wealth in much of the developing world. The rapid rate of urbanization seen in many countries is not only linked to growing affluence but also gives rise to changes in people's food preferences; usually tending towards greater convenience

and higher standards of safety. As well as the many benefits and opportunities associated with rapid sector transformation and growth, they are also associated with social, environmental and public health risks. Poultry are kept in most areas of the world and provide an acceptable form of animal protein to most people throughout the world. During the last decade, many developing countries have adopted intensive poultry production in order to meet the demand for this form of animal protein. Intensively kept poultry is seen as a way of rapidly increasing animal protein supplies for rapidly increasing urban populations. Poultry are able to adapt to most areas of the world, are relatively low priced, reproduce rapidly, and have a high rate of productivity. Poultry in the industrial system are housed in confinement with the aim of creating optimal conditions of temperature and lighting, and in order to manipulate day-length to maximise production. The term broiler is applied to chicks that have especially been bred for rapid growth. Broiler strains are based on hybrid crosses between Cornish White, New Hampshire and White Plymouth Rock. Layers are efficient egg producers, breeds used for egg production in the industrial production system are almost entirely based on the White Leghorn and Rhode Island Red.

This comprehensive text covers all types of farm animals and provides detailed information on each species.

—Author

Chapter 1

The Sustainability of Livestock Production Systems

Livestock are usually helpful in sustaining agricultural production. However, there are cases where livestock development has had disastrous environmental consequences. For example, clearing of the tropical forests in Central America and the Amazon during the last two decades, these developments has been sharply criticized for their ecological and sociological damage.

Most criticism has focused on

a) the destruction of irreplaceable genetic materials,
b) tendency for pasture to rapidly diminish in productivity because of loss of soil fertility, leaving the fragile soils vulnerable to compaction and erosion,
c) the displacement of indigenous peoples and small farmers by land speculators who have used cattle ranching as a mechanism for obtaining and controlling large tracts of land, and
d) the threat to the environment from destruction of oxygen producing trees.

Livestock development, *per se,* in most of the Amazon basin is not very profitable at current prices. Nonetheless, government incentives in Brazil have affected livestock development and, more dramatically, Amazon settlement and deforestation (Binswanger). Income tax credits and subsidised interest rates on loans for livestock development, along with grants of land on favourable terms to individuals engaged in livestock development, have given substantial private incentives for livestock development in rainforest areas.

This is one of the most dramatic examples of a case where government policy is the primary cause of an unsustainable agricultural

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Index

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