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A review of traditional technologies based on literature and field experience

Introduction

Urban agriculture has existed in various forms and places for a long time. It was practised in the Aztec and Mayan civilizations and in prehistoric Jericho. More recently, it has been banned in some modern cities, but continues to emerge in others. Lately, it even seems to be growing in importance and scope. Livestock raising has often been part and parcel of urban agriculture, presenting its own specific problems and opportunities. Until recently, it was often regarded as problematic, backward and a sign of poverty. As with all branches of urban agriculture, however, livestock keeping now seems to be recognized for the positive role that it can play in urban living conditions across the world (RUAF, 2000; Bakker

et al.

, 2000; FAO, 2000). Indeed, livestock production has a variable and controversial, but often essential, role to play in and for cities. It occurs on a small scale, with both small and large animals. It is subject to change, e.g. local breeds are replaced by foreign breeds and, while it is increasing in some cities, it is decreasing elsewhere.

TABLE 1

Breed	1993	1996	Annual change (%)
Local non-graded breed	356	200	-11.0
Exotic cross-breed	56 224	69 150	5.8
Ex-foreign breed	50 733	61 010	5.0

Source:

Based on MAAR/FAO/GTZ (1997).

TABLE 2

	Per capita consumption (kg/year)			
	1985		1995	
	Urban	Rural	Urban	Rural
Red meat	26.0	9.8	34.5	12.8

Poultry	3.0	0.3	7.8	1.6
Eggs	14.0	5.6	16.6	5.8
Milk products	14.0	0.0	15.1	1.5

Source:
Based on FAO (1998a).

In Asian cities such as Hong Kong, Singapore, Calcutta or Dhaka, the raising of pigs, poultry and fish is widespread (80 percent of Dhaka's inhabitants are reported to keep animals; H. De Zeeuw, personal communication, 2000) and links between animal keepers and restaurants for feed supply and produce marketing are close. Likewise, in poor quarters of Latin American cities such as Lima, La Paz or Mexico City, pigs, poultry and guinea pigs are raised in backyards and on rooftops.
(Waters-Bayer, 1995.)

Urban consumers use more animal products than rural consumers, and consumption as a whole seems to be increasing (Tables 1 and 2). Neglect of the livestock sector can only lead to negative developments, while positive attention can help to uncover the opportunities inherent to this form of livestock production.

The old cobblestones of the main street in the ancient Roman town of Pompeii, near Naples, are scarred by the wheels of wagons that used to be drawn by horses and/or oxen carrying goods for the town's inhabitants or to supply the military. Nowadays, the covered Ponte Vecchio bridge in Florence is the home of goldsmiths and jewellers who replaced the original butchers and fishmongers, supposedly when one of the Medici princesses complained of the smell. These two cases from historic Italy illustrate the following controversial features of livestock in urban environments:

- Livestock keeping in and around cities is not a new phenomenon and it can be both indispensable as well as a nuisance.
- Urban livestock keeping is not confined to the tropics but has also been part of city life in temperate regions.
- The story of the Medici princess shows how policy-makers may have a different perception of urban livestock from that of ordinary people.

Animals can create problems such as smell, risk of disease, pollution of waterways, or quarrels between neighbours when they invade and damage gardens. However, they can also be a source of income, they provide food or services, help to reduce the volume of organic waste and can be part of social networks that are only clear to those who are involved in them. What is urban livestock, and is it really such a problem?

An urban livestock system can be roughly defined as a form of livestock keeping that is concentrated in and around cities. However, it is very difficult, if not impossible, to give a more precise definition that is universally valid. There are problems, for example, in defining the exact meanings of a city, a peri-urban region, livestock, a livestock system and where the boundaries are. This report uses the following working definition of an urban livestock system:

This description allows all types of livestock keeping in and around cities to be considered urban livestock systems of one sort or another. It reduces the precision but widens the validity of the definition. It leaves the setting of precise and locally relevant definitions to the people directly

involved in a particular set of conditions, but it still characterizes the systems sufficiently to distinguish them from, for example, mixed or pastoral systems.

This report lists the constraints, positive experiences and technologies that create a variable but useful role for livestock in cities. It stresses that this role is not confined to the production of food - social aspects of urban livestock are manifold, particularly when smaller-scale enterprises, e.g. of backyard proportions, are involved. Animal keeping in its various forms may cause some pollution, but it may also actually help to clean a city. A good understanding of all these aspects helps the various interest groups (stakeholders) to appreciate the benefits that accompany the drawbacks in keeping animals in urban areas. Important drawbacks mentioned in this report are those associated with systems that concern large specialized and commercial units.

Chapter 2 of this publication describes the different ways in which urban livestock is viewed by the different stakeholders. This is followed by an overview of the major criteria that help to distinguish among different patterns of urban livestock keeping, the reasons for and against urban livestock keeping and the major problems inherent to the system. Special attention is given to flexible, participatory, non-linear approaches to assessing these problems and identifying solutions. In Chapter 3, different types of technologies are described. Major livestock species occurring in urban conditions are described in Chapter 4; husbandry techniques (feeding, breeding, animal health) are outlined in Chapter 5; and Chapter 6 deals with the processing and waste management of livestock products. Conclusions are drawn in Chapter 7, which is followed by a bibliography. Given the recent upsurge in attention to urban livestock keeping there is also a list of sources of further information and contacts for those who are interested in acquiring more details on urban livestock. The publications by Bakker *et al.*

(2000), RUAF (2000), Schiere (FAO, 2000) and Wilson (FAO, 1995a) are particularly relevant in this respect, and additional useful new material is likely to be produced in the near future.

This publication aims to raise awareness of urban livestock by sharing written and unwritten experiences with a broader public. Mutual comprehension among urban livestock keepers, other city inhabitants and such "third parties" as policy-makers and scientists is indispensable if the important role of urban livestock in the food security and economy of many cities around the world is to be maintained.



Yes