

Crossbred  
cow  
checking  
waste in  
India

Michael W. Fox



## Livestock in and around cities

The cobblestones of the streets in the old city of Pompeii near Rome are scarred by the wheels of wagons that used to be drawn by horses and/or oxen, for carrying goods or for supplying the military. The covered bridge in Florence is now the home of goldsmiths and jewellers who replaced butchers and fish traders, supposedly because a "Medici" queen complained of the smell

(A. Scappini, pers. communication 2000)

### Editorial

Hans Schiere,  
Azage Tegegne,  
René van Veenhuizen

Urban livestock keeping has existed in many forms and places. It still exists today, and it may even make a comeback if one considers its various roles: the use of empty plots, cleaning up of garbage, provision of fresh food and income. However, the examples from ancient Italy illustrate several important aspects of the controversial role of livestock in urban environments:

- ❖ Urban livestock is not a new phenomenon;
- ❖ Urban livestock keeping occurs in cities across the globe; it is not confined to the tropics;
- ❖ Livestock in cities can be an unavoidable nuisance, with good and bad aspects;
- ❖ Policy makers such as the "Medici" queen have other perceptions about urban livestock than the common person who wants to make a living.

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Livestock keeping in cities has special problems and opportunities indeed, and they form the topic of this issue of the

Urban Agriculture Magazine. It contains articles and summarised contributions on particular cases that go beyond the general observation that livestock can be important. The contributions describe how different cities and people cope with problems that are sometimes caused by animals, and with other problems that can be solved by animals. The first part of this editorial presents different ways in which various stakeholders view issues in urban livestock. The second part discusses functions, problems and reasons for urban livestock keeping, and the third part suggests ways to classify urban livestock systems. It is thus shown that livestock plays a

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location-specific but often essential role in cities for the production of food and in terms of social aspects, particularly in small-scale animal production. Moreover, animals not only cause pollution, but they can also help to clean up the city. The last part discusses some points aimed at achieving a better understanding of urban livestock keeping among policy makers.

### STAKEHOLDERS AND PERCEPTIONS

The increased interest in urban livestock is evidenced by several programmes and networks and by the authors of papers in this magazine who responded to our call

for papers with a sense of “finally attention” for this type of animal production. Indeed urban agriculture and its livestock component has always been there but it has only recently been rediscovered by “Medicis” who were taught to ignore this sector of urban development. The contribution by Emil Arias for instance illustrates how students were made to see the relevance of urban livestock. Animals do not only cause nuisance such as smell, risk of disease, pollution of waterways, and quarrels. Animals also are a source of income, they provide food, services, they recycle organic waste (as shown in the case study on Montevideo) and they are part of social networks that are only clear to those intimately involved in them.

Any categorisation of literature regarding sub-sectors of, in this case, urban livestock is bound to be incomplete, as the ways in which local stakeholders, scientists and policy makers may view urban livestock differ considerably. However any classification is better than none at all and we shall start by considering the level of the people represented by the owner of a bullock cart. He or she makes a living in this business and he is reluctant to give up such business, the same situation as for the owner of a small dairy. At the same level we also find a mother of a child with dirty clothes due to animal excreta or a father who gets angry at the neighbours’ goat for damaging his vegetable plot. Many reports have been written on these “family-level” concerns. At this system level there is also a wealth of practical publications on how one could raise small livestock “in the backyard”.



### LIVESTOCK IN NINETEENTH CENTURY NEW YORK CITY

Not until the first part of the nineteenth century did commercial agriculture emerge as a viable economic activity within the limits of New York City. Two forms of agriculture, both commercial and subsistence oriented, existed in nineteenth century New York City: livestock husbandry and horticulture. By the end of the century, however, urban livestock production had slipped into decline, while urban horticulture continued to thrive into the twentieth century.

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### THE BEJA URBAN ECONOMY

The Beja are a confederation of tribes united by a common language. This article describes the migration of Beja pastoralist labour to Port Sudan from Halaib Province (NE Sudan), and the different livestock holdings that the Beja have in town. Although most urban-based pastoralists live in great poverty, some manage to successfully exploit urban opportunities whilst continuing to engage in rural-based livelihood strategies.

A second level of stakeholders is represented by the municipal legislator who has no direct interest in livestock but who worries about fights in the neighbourhood, or about a quick buck to be made by fining people who keep animals illegally. Exceptions to this rule exist, e.g. the civil servants of Dar es Salaam are the major suppliers of milk. Many of the administrators who are not involved in this way tend to consider urban livestock as a sign of backwardness. Together with the academic cadre they tend to see only one aspect of reality, that of their own sector or discipline (Ackoff, 1999). Reports from such professionals are therefore bound to only find problems with what they are supposed to regulate or to study. This is an important reason for the often gloomy tone in official reports on urban livestock. (Wilson, 1995; Ho & Chan, 1998)

The third level of stakeholders is represented by the planner (national or international) who is concerned with the production of food to “feed the masses”. These planners tend to stress that urban livestock and agriculture produce only a fraction of the dietary food “requirements” for an urban population. Like the disciplinary oriented specialists they overlook the fact that urban livestock can fulfil many different roles, and that the “fraction” can be substantial for certain groups. Such planners represent the so-called linear thinkers who tend to see the interest of only one section, e.g. food production (Wilson 1995; Ho & Chan, 1998; Schiere, 2000). Non-linear thinkers on the other hand consider several aspects and interests that are found in circles of visionary architects and NGOs. The two lines of thought should not be seen as competing: the “linear thinkers” going for

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## Dear Readers

The first issue of the Urban Agriculture Magazine presented articles covering the broad spectrum of urban agriculture. This second issue focuses on a specific topic *Urban Livestock*, and this is how the *UA-Magazine* will appear from now on. It will be published three times a year and each time covering a specific topic

This issue comes out a bit later than planned. The amount of articles submitted was high, and we certainly hope we will receive the same kind of enthusiasm for the next issues. We offer you 16 articles in this issue. It was decided to publish almost all of the submitted articles, because the issue of urban livestock appeared to cover many different issues, and only by taking all these contributions together we felt the issue was adequately dealt with. In forthcoming issues we will continue to try to keep the amount of articles to about 10, not going over the 40 pages in the *UA-Magazine*.

The appearance of the *UA-Magazine* has been received very positively, and we received various encouraging reactions on the first issue. As you can see at the back we have put the Editorial Board in place, in which persons of different organisations take a seat, the Regional Focal Points on Urban Agriculture. These organisations will play a major role in the further development and regionalisation

standard and average solutions can supplement the “non-linear thinkers” who go for flexible approaches and methods to work with multiple realities. The table lists typical advantages, and it should be clear that different stakeholders experience the pros and cons differently. It also shows that many so-called drawbacks listed in the second column can have simple solutions (third column).

### REASONS FOR AND AGAINST URBAN LIVESTOCK KEEPING

A number of positive and negative roles of urban livestock are listed in the table, and illustrated in this Magazine. Interestingly, there are arguments to do away with livestock in cities because of their pollution, while at the same time city planners, as in the case of Montevideo, are considering the use of pigs to reduce the volume of organic wastes. Mexico city has neighbourhoods that actively recycle their waste through urban dairies and there are programmes in Ghana which re-utilise dung from large-scale poultry farmers (Drechsel et al. this Magazine). All this shows striking parallels with modern city planning around the world: much thinking aims at mutual

adjustment of different kinds of companies into so-called industrial parks. This is done to reduce pollution by recycling waste, a typical case of creative thinking that reshapes problems into opportunities.

### CRITERIA TO DISTINGUISH BETWEEN MAJOR URBAN LIVESTOCK SYSTEMS

It is impossible to provide a generally valid classification scheme. However a clear discussion of the pros and cons in urban livestock requires a classification of some sort. Cities like Bombay and Dar-Es-Salaam are too different to be captured under one single scheme of classification. Still, one can say with a degree of certainty that keeping dairy cows is a fairly unrealistic option for the heart of modern Bombay, Tokyo or Amsterdam. Livestock keeping is, however, quite acceptable in urban areas where there is much green space, or even where there are a lot of by-products from agro-industries.

For example, urban dairies were important around beer breweries of 19th century Copenhagen (J. Phelan, pers. comm., 1999) around distilleries in New York (see Tremante in this Magazine), and today in the city of Dar-Es-Salaam

### INCREASING USE OF POULTRY MANURE IN GHANA

Livestock production is a vital part of urban and peri-urban agriculture (UPA) in Kumasi, in Ghana, where many crop farmers benefit from cheap poultry manure available in



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large quantities. However, with increasing competition for this resource, the manure is seldom stored long enough to prevent the contamination of food and water with pathogens.

where dairy provides extra income to civil servants. Large poultry businesses may be controversial in and outside the city boundaries, but small livestock such as guinea pigs, goats or poultry may even help to clean refuse from the kitchen or hotels (see the articles on Kumasi in Ghana or Montevideo in Uruguay).

Indeed, an infinite number of classifications is possible; each one with advantages and disadvantages. For example, Waters-Bayer (1995) distinguishes between on-plot and off-plot and between rich or poor. The papers by Bellows et al. and Pantuliano suggest that ethnic background, caste or religion may form the basis for classification of the livestock. Schiere (2000) distinguishes several criteria, of which the classification into the categories ‘subsistence small-scale’, ‘semi-commercial small-scale’ and ‘large-scale industrialised’ is perhaps the most relevant. An example of a standard type of classification is referred to in the paper by Azage et al. In line with a participatory approach used in most RUAF work we suggest that any suggestion for classification criteria should be seen only as a guide to establish locally relevant criteria.

For the purposes of this Magazine we feel that it is best to at least distinguish between intensive and extensive systems, a classification

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tion of the *UA-Magazine* in the near future. In the next issue you will receive more information on this.

You will also find information on the subscription policy of the *UA-Magazine*. This policy is under discussion with the RUAF focal points and the editorial board of the *UA-Magazine*. Of course all this information will remain available on the website of RUAF for free.

The guest editors for this issue were Azage Tegegne from ILRI in Addis Abeba, Ethiopia and Hans Schiere, from Ventana Agricultural Systems A&D, The Netherlands. A considerable input was also received by the Urban Livestock group of ETC: Ann Waters Bayer, Katrien van 't Hooft, Sheila Oparachoa and Willem van Weperen. Many thanks to all of them.

Next issues of the *UA-Magazine* will be on Health and Urban Agriculture (articles in before January 1) and Integration of Urban Agriculture in Urban Planning (your contribution expected before April 1). Your contributions are most welcome, not only articles but also abstracts of books and articles, and information on projects and events.

The editor



## Positive and negative aspects of urban livestock and a sample of ways to cope with the problems.

Positive	Negative drawbacks	Coping strategies
<ul style="list-style-type: none"> <li>• No problems with traffic jams due to transport of animal produce</li> <li>• Animals as waste cleaners: garbage; hotel waste; agro-industrial waste; sewage-utilisation</li> <li>• Resilience of a city in times of civil unrest</li> <li>• Fresh produce in inner city, little or no packaging / processing required</li> <li>• Income for poor people</li> <li>• Investment for the rich</li> <li>• Educational value, e.g. link between urban people and "nature"</li> </ul>	<ul style="list-style-type: none"> <li>• Public health problems (disease such as parasites)</li> <li>• smell, dust and noise</li> <li>• Pollution (due to manure effluent and wastes e.g. from slaughterhouses)</li> <li>• Competition for space and conflict</li> <li>• Stray animals / traffic problems</li> <li>• Health and welfare problems of animals due to high densities</li> <li>• Low output per animal, not "modern", advanced or productive, form of production</li> </ul>	<ul style="list-style-type: none"> <li>• Good health service and better packaging / treatment and awareness raising</li> <li>• Use of drains, straw, bedding, sheds, tree hedges</li> <li>• Biogas, smaller scale enterprise, dung cakes, integration with vegetables</li> <li>• Reduce numbers, use small animals, involvement of local people to solve problems</li> <li>• Traffic rules: limit speed of cars, animals should be kept off main roads</li> <li>• Redesign housing and/or awareness building and/or change management; go for smaller scale</li> <li>• Not a problem, work on perception, see other parts of the multiple perceptions</li> </ul>

Note: the positive aspects in column one are not directly related to the negative drawbacks in the second column; but the issues in the same row over columns two and three are directly related.

that resembles that of Waters-Bayer (1995). The intensive ones tend to be industrial, concentrating the advantages (income, tax benefits, etc) and dispersing the disadvantages (smell, pollution, etc.). The consumers who benefit will also primarily be those who have access to the market, not the poor who keep a few backyard animals

for themselves. The extensive systems are small-scale, commercial, semi-commercial or even subsistence-based. They provide income, but also tend to be important for social relations.

### OPTIONS AND PRIORITIES FOR THE FUTURE

We have seen that one view is to regard animals as a source of pollution, a public health hazard, and constrained by urban production conditions that do not allow them to produce enough food for the whole city. However, many of the problems are balanced by advantages. That is

why urban livestock systems continue to exist and are still even emerging. Clear discussions require a distinction between levels of system hierarchy and stakeholders, and the way of looking at urban livestock determines the outcome of the analysis. Those trained in the linear mode of thinking tend to recommend removal of animals if they smell; they will tend to prohibit all livestock even if only a number cause problems. Non-linear thinking is more creative. It distinguishes between stakeholders, functions of animals and urban contexts before deciding whether urban livestock keeping is good, bad or in-between. It also actively invites, through participation, local solutions for local problems. That is perhaps the gist of this issue of the Urban Agriculture Magazine: a decision on the pros and cons of urban livestock depends on who is looking at the problem and on where one is. In places

## Non linear thinking is more creative

where urban planners have the creativity to shed their preconceived ideas they have shown that interesting things are possible, making use of animals for urban well-being. On the institutional side this requires a lot of work to (re)orient planners, civil servants and academics towards more creative approaches. There is still much research to be done on the role of urban livestock in the social dynamics of a local community, its role for poorer sections and women in particular, and also regarding the changing role of livestock over time. Development efforts based on local participation can draw on a large arsenal of existing technologies to overcome the many drawbacks of urban livestock and to help it reach its full potential.



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### Urban Pig Farming

#### in Settlements in Uruguay

One of the survival strategies developed by the residents of urban settlements in the department of Montevideo, Uruguay, is the collection and sorting of household, organic and inorganic, solid waste. Due to several factors, including the socio-economic condition of breeders and the urban status of the neighbourhoods where the practice is carried out, pig farming in urban areas is one of the most remarkable aspects of Urban Agriculture developed in Uruguay.

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