

**SIANI**

Swedish International Agricultural Network Initiative

Policy Brief

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Urban animals – feeding the cities of the future

Introduction

More than half of the world's seven billion people live in urban areas – a proportion that is set to increase to 69% by 2050. Rapid urbanization will increase the demand for food security, nutritious diets and food safety for urban populations.

It can be impossible to transport perishable products over long distances in countries that lack the necessary infrastructure, especially in warmer climates where there is a need for a temperature-controlled supply chain (known as a cold chain). In circumstances like these, urban and peri-urban agriculture can meet growing demand in cities for fresh produce.

Urban agriculture usually occurs within the boundaries of a city, whereas peri-urban agriculture tends to take place in its outskirts. Urban agriculture looks different depending on the region or country where it's practiced, and governments' policies on it vary as well: in some cases it is promoted, but in most cases it is informal or even prohibited. There are more urban farmers than one might expect, and in some cities more than half of all households practice urban agriculture, with or without animals.

The practice of animal husbandry can often take contrasting forms in urban and peri-urban areas. While a squeeze on land in the cities means that urban livestock is usually kept in backyards or left to scavenge, peri-urban farms can be intensive and highly commercial. This means that producers and value chains are also diverse, with a range of actors earning a living at different points along the chain.

Why is there urban livestock?

The world's growing middle class is demanding more and more animal products for food, and even India, with its large vegetarian population, is seeing a rapid increase in meat and dairy consumption. But it isn't only growing incomes that generate demand: the process of urbanization in itself is associated with shifts to more varied diets that include more animal products. These trends are ongoing: estimates for low-income countries show increase in meat consumption of 106 million megatons, and milk consumption by 177 million megatons, from the late 1990s up to 2020. Trends in high-income countries are similar but less pronounced. Naturally, the rising demand for livestock products creates an economic incentive to produce these highly valued foods.

Animal husbandry in urban areas has many origins. Often, migrants to cities have a background in farming and may bring animals with them when they relocate. Urban expansion is another driver: as cities grow they can engulf surrounding farms, and livestock holdings that were once rural become peri-urban, and then finally urban. Sheer necessity is often the reason why people keep livestock in low-income areas, because agriculture may be the only way to sustain a family. For poor households, smaller animals such as chickens, pigs or small ruminants, are the usual choice because they can be kept even when a household doesn't own any land. Moreover, for the urban poor, livestock is not simply about food and livelihoods: it can also confer social status, and may be considered as a financial asset. Even though many poor may struggle to afford small animals, keeping livestock can offer one of the most effective means of escaping absolute poverty.

KEY MESSAGES

- There will always be a demand for safe food from animal sources in cities.
- While urban animal keeping helps to provide city dwellers with diverse, fresh and nutritious food, keeping livestock in densely populated areas that lack infrastructure may pose risks to public health and create environmental hazards.
- There is a lack of evidence on the risks associated with different kinds of urban livestock, and a need for risk assessments.
- Regulations may be counter-productive, and their effects need to be evaluated in order to guide future policy.
- Waste management is a major cause for concern in urban agriculture. Different solutions need to be studied in order to pilot and evaluate interventions.

Livestock will be a part of urban environments in the future and it is necessary to find ways forward to practice it in a safe and sustainable manner.



A cow scavenging waste in Guwahati, India. Photo by Johanna Lindahl, SLU.

Features and advantages of urban agriculture and livestock

Where land prices are high, as is often the case in urban areas, agriculture needs to render higher profits per area unit. Keeping livestock can be a solution, since it often yields profitable products. And because several species feed themselves through scavenging it is possible to keep them even without dedicated land, for example in backyards. This kind of production is usually combined with other work, and mostly involves small animals that are cheap to purchase, easy to sell, reproduce quickly and can be fed household waste. Preference for one or another type of animals is often determined by culture and religion. Urban agriculture can take place close to local city markets, offering the chance to sidestep traders and other middlemen, thus increasing profits for the farmers and creating value chains that lead to jobs. Informal markets also enable the poor to buy livestock products in small volumes, and because livestock can be kept close to the homestead women play a key role in the enterprise.

The dilemma

In spite of all the benefits of urban farming for livelihoods and food security, there are some challenges that are unique to the urban setting. High land prices and lack of available land may force people to keep animals on common ground, or occupy land close to railway lines or riverbeds. Difficulties in obtaining fodder means that people rely on leftovers for feed, or that animals are forced to scavenge in garbage dumps. Scavenging and free-roaming animals in cities also contribute to road accidents and traffic jams, and the increased interaction between people and animals increases the risk of infectious disease outbreaks.

Different cities have different solutions for handling animal manure, and some cities have no solution at all. There may be markets where manure, especially from cows, is sold as fertilizer, and while this deals with a large part of the problem, vehicles are in some cases not equipped to stop manure from leaking during transport. Some farmers turn a profit by selling dried dung cakes as fuel for stoves. Many cities have inexpensive facilities to generate biogas from manure, which also offers a source of income to livestock keepers. Despite these effective and viable waste management options, in many cases waste is only handled by flushing it into rivers or city drainage systems, or waste is not handled at all and left to pile up until the next flood carries it away. This can contaminate water bodies that might be used for irrigation, washing or fishing, carrying the risk that animal bacteria will be transferred to humans.

Many cities have peri-domestic wildlife, which can also create public health challenges. Rats and mice thrive in cities where there is a lack of sanitation infrastructure, and scavenging packs of dogs are common in many cities too. When such wild or feral animals interact with a high density of livestock and humans the risk of disease increases.

In most urban areas extension services are limited, and most veterinary services are directed towards rural producers. It is even harder for farmers to seek help in cities where it is illegal to keep livestock, and it is unlikely that authorities will be informed when diseases are first noticed.

Knowledge gaps

Most agricultural research focuses on rural farmers, so results may not be applicable to urban settings. In high-income countries, large-scale rural farms with well-maintained infrastructure for transporting animals and products to urban markets are central to overall production, but the situation is different in other parts of the world. There is a need for research on rural, peri-urban and urban livestock keeping to generate evidence on the challenges and opportunities linked to these different settings. Drawing comparisons between the settings will help guide policy-making.

Research is needed to evaluate the risks of urban livestock keeping, both to public and animal health, as well as to the environment. There is also a need to evaluate the impact of regulations and policies aimed at addressing these risks.

Standards applied in low-income countries are not always based on risk assessment but are instead adopted from standards in the EU or the U.S., which may be unsuitable or unfeasible in other locations. Are regulations helping people to consume safer food, or are they counter-productive?

Resistance to antibiotics and antimicrobials is also a concern around the world. The use of antibiotics varies significantly between countries, and there is a risk of increased resistance both in rural and urban settings. However, the easy availability of pharmaceuticals in cities, combined with an often dense human and animal population and a contaminated environment, can make the problem worse. Gender perspectives on urban farming have not been fully explored. Women, men, boys and girls take on different tasks: women more often manage small-scale livestock, while men tend to own larger animals and take over when business becomes more commercial. Gender analysis can help to understand how to empower women so that they become more active and equal participants. In addition, knowledge dissemination may need to target women, who are often less literate than men and may have a greater need for the information.

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