

POLICY BRIEF

Towards Addressing Periurban Livestock Waste Challenges

EXECUTIVE SUMMARY

Increase demand for animal products and ready market in the urban areas has fueled livestock keeping in urban and peri-urban areas of Tanzania. Consequent problems emerged in the due course and slowly resulted into overt problems. This called for intensive research to establish underlying information which can provide guides to policy makers to design user friendly guidelines leading to proper animal wastes disposal. Evidence based results obtained from research involved biological studies and socioeconomic considerations. These profoundly provide a base that fairly considers all aspects surrounding the sector, believing that the present socioeconomic set up of Tanzania cannot favour total ban of livestock keeping in the urban and peri-urban areas.

- Health effects and social conflicts caused by animal waste occur in urban and periurban livestock farming in Tanzania
- Simple manure treatment mitigates the biological effects to the health and therefore should be adapted in the country
- Manure from animals is unused source of income generation to livestock keepers and can benefit the society by increasing crop production
- Enforcement of by-laws dealing with animal keeping and waste management should go together with education on manure treatment to the livestock keepers.

INTRODUCTION

In 2013 The Sokoine University and University of Copenhagen initiated a project on environmental and health challenges associated with urban and peri-urban livestock farming and associated challenges through research and training. The main objective of the project was to mitigate the negative environmental and health impacts and to improve production of livestock farming in urban and peri-urban environment of Tanzania. The project also dwelled into the adverse biological, social and human health effects of livestock keeping and investigate how economic benefits can be obtained from the animal waste. The results from the investigations demonstrated that the animals are kept in a limited space without appropriate facilities to handle waste consequently creating nuisance and conflicts in the society. Animals waste was found to carry organisms and drug residues that can be harmful to human beings. However, the study revealed the untapped economic benefits to livestock keepers, neighbours and crop producers. Application of workable treatment of the waste resulted into reduction of harmful organisms.

WHAT IS PERIURBAN LIVESTOCK FARMING?

Peri-urban and urban livestock farming involves keeping animals, distributing livestock products and by-products in townships, municipalities, city centers or the interface.

WHY PERI-URBAN LIVESTOCK FARMING?

The growth of livestock sector in areas adjacent or in cities has been driven by increasing urban



population, demand for animal products and women emancipation which are pro-poor survival strategy to urban dwellers. However, the sector is associated with limited space leading to overutilization of squatter plots while undermining the proper approach of animal waste storage and disposal. The increase of livestock population in peri-urban and urban areas does not match the appropriate measures to handle their waste, thus creating a concern on public health

and environment because of the resulting contamination.

HOW WERE THE PROBLEMS INVESTIGATED?

The project studied the problems using biological, social and economical studies, together with evidence-based mitigation studies of biological effects of animal waste. It was envisaged that biological solution will drive changes in social and economic aspects relate to animal waste challenge, the main approaches were used

- Biological studies: These involved quantification of risks from manure and drugs residues associated with keeping of animals in urban and periurban areas. Manure treatment methods appropriate to small holder urban livestock systems were designed and verified for risk reduction. Animal welfare studies were also done under this category to know how the animals feel when kept in the given environment.
- Sociological study: This investigated the impact of peri-urban farming to the society and conflicts associated with environmental pollution from animals and animal waste. This helped to identify sources of social conflicts caused by livestock keeping in the urban areas.
- Economic studies; these were used to evaluate the economic aspects of livestock keeping and the manure and how they can be used to generate income to the livestock keepers. The study showed that feed resources mostly used by farmers were crop by-products and Benefits derived from livestock wastes.

WHAT DID WE FIND

- Overall it was found that animals keeping in periurban areas poses risk to people because of poor handling of manure and other wastes from animals. The studies also found residues from drugs used in the environment associated with waste from the animals. There are also conflicts between neighbours due to slurry, odours, nuisance due to flies emanating from manure. There are existing by-laws in the authorities about keeping animals in the urban areas, but they are rarely invoked. It is not explicit in the laws how to deal with animal waste and there are no specific dumps designated for animal waste. However, big potential to income generation from manure and benefits to crop agriculture is untapped benefit that the studies have shown. Consideration of reducing the risks using tested method of manure treatment was shown to be able to mitigate biological effects, which if done properly will reduce social conflicts as well as increasing the value of manure to the crops and therefore economic value.
- **Summarily**
 - It is revealed that commensal bacteria carry potential pathogenic traits just as the pathogenic bacteria do carry. This is because the human, animal and waste samples were collected in various ecosystems but were similar in terms of strains and pathogenic traits.
 - The study on animal waste treatment showed that animal wastes if properly handled and treated could reduce contamination of the environment as well as water sources.
 - Manure treatment using aerated cages result into reduction of the manure and reduction of bacteria in 30 days, leaving safe and manageable waste ready for use in crops.
 - Poor knowledge on animal wastes handling is a major challenge to public health.
 - Costs and benefits associated with alternative manure use practises and socioeconomic factors that influence willingness of horticulture famers to pay for manure.

CALL TO ACTION

A successful strategy to deal with the livestock waste in periurban and urban area is not far-reaching. Such a strategy should include awareness creation on the part of all stakeholders, where livestock keepers should treat the manure to reduce biological risks, the interconnection with crop farmers for use of the manure to increase productivity, the by-laws on the animal waste and environment should be enforced.

- Manure should be treated to reduce odour and volume before application to the farms
- Workable guidelines and regulations on livestock keeping and proper disposal of the livestock wastes using the model developed should be adopted by authorities.
- Local government officials should observe and enforce livestock keeping by- laws and make the livestock keepers use the recommended manure treatment methods

