Innovation brief

RESEARCH PROGRAM ON Livestock

CGIAR

Photo ILRI/Sumy Sudarni

Herd health management in low- and middle-income countries for improved livestock health and productivity

KEY MESSAGES

- In addition to livestock diseases, there are many animal health constraints that hamper livestock productivity and affect animal welfare. Therefore, a herd health approach is important.
- A herd health approach identifies the various health constraints directly with the farmer and designs context-specific integrated interventions to address them – as opposed to the more common approach based on the diagnosis of single diseases.
- In addition to the introduction of biosecurity and other direct disease prevention measures, interventions may include management components such as improved nutrition, better reproductive management, enhanced hygiene, or appropriate housing for animals.
- Collaboration with farmers ensures implementation and contributes to sustainability of the interventions and resilience of the livestock production at the farm or in the herd.

INTRODUCTION

In high-income countries with a highly productive livestock sector, animal health services have moved from reactive therapeutic activities towards more preventive approaches, including complementary production aspects like feeding and management. This approach is called **herd health management**.

This approach focuses on improving livestock health management and husbandry practices that in turn demand improved or new skills among farmers, as well as animal health professionals. Despite being more complex to implement than, for instance, a vaccination campaign, this approach ensures longevity of the interventions and raises the resilience of production at the farm or in the herd.

The focus of this approach in a developing country context has been on practices that develop the capacity of animal health professionals in different aspects of herd health, and the ways in which to communicate with farmers about context-specific solutions for improved animal health and management.

New issues were found that may affect livestock health and productivity at the farm and established ways to designing context relevant trainings for animal health professionals and communicating advisory and problem-solving support to male and female farmers.

SLU Swedish University of Agricultural Sciences

ILRI INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE

A woman farmer in Uganda with her pig. Herd management components such as appropriate shelter for animals, enhanced hygiene and improved nutrition are part of the herd health approach

Vaccinating a piglet in Uganda.
Photo ILRI/Sumy Sudarni

A mobile feed application in Uganda helps farmers and feed providers identify appropriate feed for pigs and other livestock. A well-nourished and healthy animal is more productive and less susceptible to disease. Photo ILRI/Sumy Sudarni

APPROACHES AND RESULTS

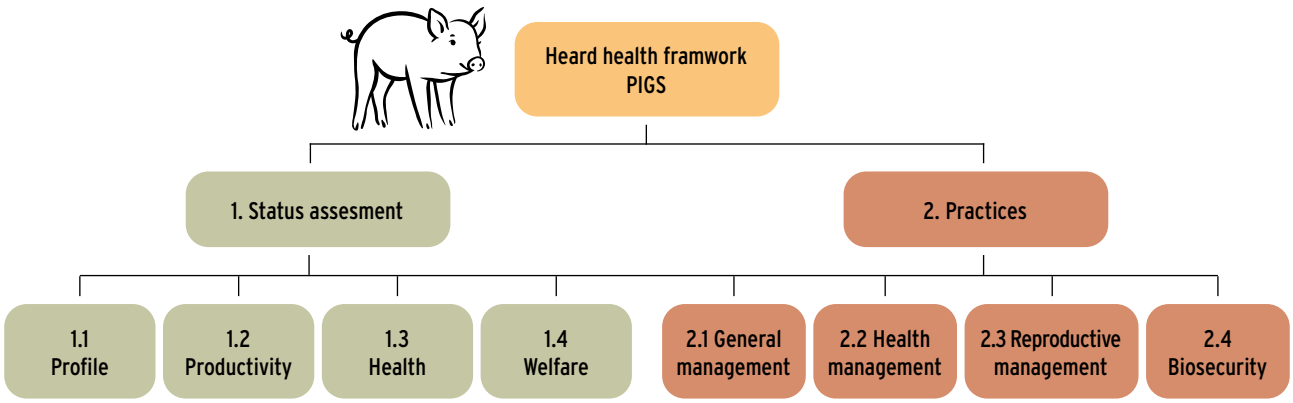
A successful herd management concept from Sweden was adjusted to fit the needs of low- and middle-income countries (LMICs), using researchers experience of non-pastoralist smallholder production of pigs, dairy and small ruminants from East Africa and Central and Southeast Asia. This adjusted concept is **presented in a manual** (Båge et al. 2020) where the dialogue between the farmer and animal health officer is highlighted as key to first identify the issues hampering productivity and health and then to agree on feasible solutions. This is a bottom-up process, and the tool includes checklists for each animal species that integrate animal welfare aspects.

The **analytic tool** was also used to identify productivity issues in small-scale pig farming in Uganda and in the process highlighted other problems than the ones commonly stressed by animal health service providers. These included inferior or inappropriate feeding, poor reproductive management, high burden of parasites combined with limited knowledge and implementation of good management practices (Gertzell et al. 2021).

Application of the herd health approach puts high demands on the skills of animal health professionals. Therefore, we introduced a pilot capacity development program called 'Pig herd health champions'. Selected Ugandan veterinary officers visited the Swedish University of Agricultural Sciences (SLU) for training and were then positioned as champions in their districts to support their colleagues (Dione et al. 2020).

Given the constraints of the COVID-19 pandemic, trainings in the pig herd health program were run as hybrid trainings, partly in-person and partly online. These were conducted in partnership with colleagues at the District Veterinary Office, Makerere University and SLU, with substantial interactive input from the participants themselves. Two successful training sessions were conducted in this way: one on reproductive management and one on parasite control. These **training packages are now available online** for free (Grundin et al. 2021a,b).

As the herd health approach is based on a deep dialogue with the farmer, **participatory training packages** were developed,



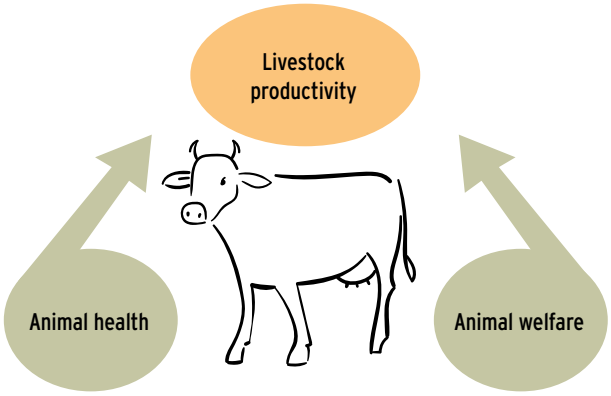
Components of the herd health management approach that can be used to identify issues that hamper livestock health and productivity (in this case with pig herds). Source: Båge et al. 2020

(Nsadha et al. 2020) along with **delivery practices** to farmers using a participatory approach (Dione et al. 2020). Training that incorporated participatory mechanisms increased knowledge of farmers on biosecurity and pig husbandry. This was regarded by extension services as an effective way to build the capacity of the farmers (Dione et al. 2020). Another piloted means to enhance the capacity of farmers was through interactive voice response (IVR) technology on mobile phone devices in Uganda (Dione et al. 2021). IVR technology was perceived, especially by women farmers, to be an effective way to receive information because it is flexible and time- and cost-efficient.

In Ethiopia, a **community-based extension and training approach** was used to engage farmers and local service providers in joint analysis of livestock health, welfare and productivity questions, thus facilitating collaborative learning and action to address priority issues. A master training course was developed for veterinarians on how to run this type of community conversations with farmers and local animal health service providers (Dione et al. 2020; Lemma et al. 2021). This participatory engagement with farmers and service providers led to better understanding of health and productivity issues. It also strengthened the working relationship and collaborative learning processes between farmers and herd health advisors in Ethiopia (Lemma et al. 2021). Several community conversation modules were developed that integrated herd health, welfare and productivity issues and were used to train farmers and local animal health service providers.

This broad approach to animal health management may also include **promotion of medically rational use of antibiotics** (Osbjer and Magnusson 2021; Lemma et al. 2019a) as well as **animal welfare awareness** (Nsadha 2021; Lemma et al. 2019b). Both aspects are strongly linked to animal productivity and the farmer's economy.

The herd health management approach is recommended for the development of efficient animal health services in LMICs. However, if there are severe shortcomings in one component of livestock management, it may not be feasible to compensate for this through superior performance in other components. A classic example of this is when livestock with high genetic potential are put in low-feed and disease-infested environments. Thus, an innovative, flexible and broad herd health approach is needed.



This illustration demonstrates the connection between animal health and welfare (both entities support each other), and how they contribute to improved livestock productivity. Source: Båge et al. 2020

CONCLUSION

- A broader spectrum of animal health issues for farmers to consider has been identified.
- A set of training resources has been developed that can be widely disseminated to animal health and other extension workers.
- The herd health approach allows animal health service providers to communicate and engage with farmers.
- Capacity for extension systems has been built and opportunities presented for animal health professionals to adopt a holistic approach to livestock health management.

A piglet is tagged at the ear for identification and record keeping after being vaccinated. Photo ILRI/Sumy Sudarni

Women and men gather at a community conversation meeting in Menz, Ethiopia. Community-based extension and training approaches have been found to be an effective means to engage with livestock farmers on better herd management practices. Photo ILRI/ Apollo Habtamu

IMPLICATIONS AND RECOMMENDATIONS

- A broad herd health approach is needed in low-income countries where animal health and productivity are hampered by multiple and interacting factors such as infections, poor feeding, suboptimal genetics and poor reproductive and general management. Such an approach requires animal health service providers to have a range of skills and abilities concerning livestock health and production.
- As the herd health approach is a long-term, disease preventive process, the animal health professionals should also have skills to engage with farm households in a participatory way to identify and prioritize disease and management issues, devising solutions and providing advisory, coaching and problem-solving support for both men and women.
- Community-based approaches have been successful in some settings to develop community awareness and action and are likely to enhance the necessary interaction between animal health professionals and farmers.
- To make the herd health approach sustainable without foreign financial support, public-private partnership (PPP) business models should be considered to allow farmers to pay for the services. Such models may also involve market linkages to generate returns on investments by farmers.

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