The “Cobaye” as an example of smallholders’ livelihoods relying on small livestock in South Kivu

Brigitte L. Maass1, Wanjiku L. Chiuri2, Dieudonné Katunga Musale3, Rachel Zozo3 and Michael Peters4

1 CIAT, P.O. Box 40677, Nairobi, Kenya; email: b.maass@cgiar.org
2 CIAT/CIALCA, P.O. Box 6801, Kigali, Rwanda; email: w.chiuri@cgiar.org
3 CIAT/CIALCA, 6 Av. Kasongo, Commune d’Ibanda, Bukavu, DR Congo; email: katunganmusale@yahoo.fr & rasho2006@hotmail.com
4 CIAT, A.A. 6713, Cali, Colombia; email: m.peters-CIAT@cgiar.org

Background

Little is known about small livestock production in the South Kivu province of the Democratic Republic of the Congo. An assessment of livestock husbandry by a rapid diagnostic survey and a participatory rural appraisal (PRA), revealed that more participants held non-ruminent (monogastric) animals than ruminants, such as chicken, swine and “cobaye” (Fig. 1). The frequency of cobaye (i.e., guinea pigs), an animal domesticated in the South American Andes, was unexpected. The importance of this species for the livelihoods of smallholder farmers in the region has subsequently been studied in more detail.

Livestock abundance and herd sizes

Small animals like goats, chicken, swine and cobaye were found to be the basis of livestock production (Fig. 1). Relatively few animals were held per livestock species in general. Herd numbers of cobaye by roughly one third each of respondent households was 1-4 animals, 5-10, and 11 to 20 (Fig. 5). The largest herd of 35 cobaye was found in a household of Burhale. Female cobaye are capable to produce around 5 litters/yr resulting in 10-15 young. Economically, cobaye most likely serve as the first step to climb the ‘livestock ladder’ that may lead to larger livestock species such as goats and cattle.

Husbandry

Usually, cobaye were kept in the kitchen and were fed on kitchen wastes and collected forages. The latter included grasses and some herbs from rather fertile soils, such as Galinsoga parviflora and Bidens pilosa (Figs. 6, 7). Cobaye are predominantly housed by children and women, both of which are responsible to collect their forage at road or field sides. Cobaye are also fed on banana leaves and stems, the farmer being of low digestibility.

Advantages of the Cobaye

1. Help women (and children) to obtain cash income
2. Produce low-fat and high-protein meat
3. Do not compete with humans for their food
4. Grow and reproduce on a flexible diet
5. Are prolific animals
6. Adapt to a wide range of climates
7. Respond favourably to husbandry and management
8. Have a size that is easy to manage
9. Are healthy and productive animals
10. Provide security from disease and other risks

Materials & Methods

Information was collected in South Kivu province of the DR Congo (Fig. 2). A rapid diagnostic survey was conducted in 24 villages of B so-called groupements in June 2009 and Feb. 2010 (Fig. 4). A PRA was carried out in 2 groupements, Miti and Tubimbi, in March 2010 (Figs. 4). Among others during the PRA, a wealth classification was carried out. Overall more than 300 participants were included. For this paper, data collected were analyzed with emphasis on cobaye production. A thorough literature review on cobaye as a domestic animal helped locating information, for example: Lammers Pj et al. 2009. Reducing food insecurity in developing countries through meat production: the potential of the guinea pig (Cavia porcellus). Renewable Agriculture and Food Systems 24:155-162.

Socio-Economics

Together with chicken, cobaye were associated with poverty, regardless of the gender group when assessing wealth classes during the PRA in Miti/Mulungu and Tubimbi. However, the poorest people in both groupements would not have any animals at all (Tab. 1). Typically, cobaye were used to supply meat to the family and pay school fees. A cobaye may fetch about 1-2 US$ in the market, while fees are about 2-3 US$/month/child in primary and 5-10 US$ in secondary school.

Issues raised

- Participants raised the following issues regarding cobaye husbandry:
  - Predators, e.g., dogs, and theft cause loss
  - Diseases, especially diarrhea, could occur any time of the year
  - Much time is required to fetch dry season feeds for livestock in the dry season
- In addition, frequent inbreeding of cobaye herds, in-appropriate housing, and lack of hygiene need to be dealt with for improvement.

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Results

Fig. 1. Proportion (%) holding a certain livestock species of 112 participants in a diagnostic survey in South Kivu, DRC.

Fig. 2. Map of the project area indicating the groupements where a survey and a PRA were conducted in South Kivu, DRC.

Fig. 3. Survey on livestock production in South Kivu.

Fig. 4. Participatory rural appraisal (PRA) in Miti, South Kivu.

Fig. 5. Number of cobaye held per household and proportion (%) as reported by 112 participants of a survey in South Kivu.

Fig. 6. Cobaye feeding on the leaves of Galinsoga parviflora.

Fig. 7. Cobaye are typically held in the kitchen.