



One Health: Connecting Humans, Animals and the Environment Video Transcript

Safeguard the informal food market. Part 1: milk

[Bassirou Bonfoh]: Pastoralists, or agro-pastoralists, are people who herd animals or combine livestock with cropping to produce milk, meat, and other products for their livelihoods. They care about the environment and contribute to manage vast grazing areas that could not be used any other way. I have worked with pastoralists in the Sahel, in the Swiss Alps, and Kyrgyzstan. I enjoy working with animal products. My interest is to provide evidence on how the quality and the price of these products could be improved. Animal care and milking vary according to each pastoral community but the culture around milk is basically the same in Africa. However, attitudes and practices on hygiene are not the same as, for example, in Europe.

I'm Bassirou Bonfoh, I'm a veterinarian by training, I would like to explore with you how we apply the One Health concept in the area of animal product, health, nutrition, and income. We would like to show you how much the health of humans depend on animals and their products. We based our One Health approach on the requirements provided by Jakob. Here is a reminder.

We set up a collaboration between veterinarians, public health services, and milk producers. This collaboration was mediated by different academic disciplines, like microbiology, food technology, social anthropology, and economics. Next, we looked at the quality issues of milk assuming different perspectives. What were the specific hazards, risks, and values attached to it? We shared the results during stakeholder seminars with milk producers, traders, consumer representatives, and authorities. We discuss our findings with them in order to come up with interventions that were adapted and improved.

How could we achieve that milk in the same market is at the same time of high quality and affordable? The answer was that we needed to find incentives for producers that were proportional to the efforts they invest. These efforts had to be cost-effective in economic as well as in social terms. The incentives included:

- 1) supporting producers as they organise themselves in associations;
- 2) a credit system for animal inputs;
- 3) training in production techniques and hygiene;
- 4) guaranteeing market access also for small dairy units.

This integrated approach generated another value if compared to the situation before. Along the milk chain increased income is being distributed. The approach helped to preserve nutritional quality and to reduce health risks.

Clearly, incentives with quality based payment induce better hygiene practices and reduce health risks. Now let us deepen our understanding and look at different aspects that define the treatment of milk. Milk is clearly one of the best products for nutrition, health, and also income. At the same time, milk is highly perishable and contains microbes that can spoil its quality, people's health, and their income. Even if good practices exist they may not apply in certain conditions. They may not be carried out due to low production, lack of technology, water and energy, and also because of cultural barriers. I will give you an example.

When I was studying veterinary medicine we often visited farms. We were always advised to boil milk before drinking because of the diseases it might transmit. The Fulani communities however, were reluctant to do so. They feared that cows would run dry and the calf may die. For them, good milk is pure and should not be heat-treated. They prefer the fermentation of milk which helps also digestion. Heating of milk prevents



fermentation since the bacteria involved in fermentation are killed. In addition, there are no standardised starter cultures similar to the one used for yoghurt.

Fermentation is the main technology that can help to reduce pathogens except zoonotic ones. Boiling milk may destroy nutritional properties such as vitamin A, omega-3 fatty acids, and anti-oxidants due to the variety of grass. Due to the small quantities produced with the lactation of less than 1,000 litre, milk is hardly discarded when a cow is treated with antibiotics. In this way antibiotic residues may be consumed by humans and fermentation is prevented. A dialogue between producers, consumers, and scientists has helped to understand that withdrawal times must be respected to sustain the fermentation process and reduce the risk of residue consumption.