Cattle keeping, including for dairy, is an important livelihood activity of the rural poor in Senegal. There are large (up to eight-fold) differences in profit to dairy cattle keeping households, depending on which breed or crossbreed of cattle is kept, and the livestock management practices utilized (Figure 1).

The highest household profit was obtained by keeping crosses of traditional Indigenous Zebu with newly introduced Bos Taurus, under good management conditions. This increase in profit was largely driven by higher milk-offtake.

Figure 1. Household profit associated with the keeping of different breeds of cattle under different management levels. *For a simulated herd size of eight adult cows and a non-transhumant herd, and taking into account all costs and benefits associated with the household dairy enterprise.*

Requirements for dairy cattle keepers to engage in, and optimally benefit from, this technology are:

- the availability and accessibility of crossbred semen, via the public and/ or private sectors;
- access to credit to support initial investment;
- capacity building on management of the crossbred dairy cattle; and
- strengthened access to inputs—particularly feed—and markets.

As dairy cattle keeping households become more commercially orientated (sell more milk), the control of income from the sale of milk starts to shift from women to men. Thus, as household dairy enterprises commercialise, gender transformative approaches may be required for equitable benefit to all household members.

**Significance of the research results**

This is the first study comparing household profit of keeping different breeds and crossbreeds of dairy cattle in West Africa of which we are aware. It provides a significant evidence base for livestock keepers, other value chain actors, and policymakers to make better and more informed decisions on dairy cattle genetic resource use.

End-users and impact

Improved livelihoods of the rural poor in Senegal, through the adoption of more profitable dairy cattle breed-types.

Enhanced policy on dairy cattle genetic resource use, including in relation to their public artificial insemination program for dairy cattle implemented by the Senegalese government.

Enhanced food and nutritional security to poor consumers in Senegal, through the increased availability and accessibility of milk and other dairy products, should the uptake of new dairy breed-types catalyse further transformation of the dairy cattle value-chain.