

## Guinea pigs in drive to improve food security in DRC

Pioneering new work by CIAT and its partners to improve guinea pig production could help tackle food insecurity in the conflict zones of the Democratic Republic of Congo (DRC).



It follows the surprise discovery last year of the rodents – native to South America - being kept as "micro-livestock" by rural households the troubled North and South Kivu districts of the Central African country. It is hoped that improving production could increase the quality and quantity of guinea pig meat, providing rural communities with a much-needed source of protein and micro-nutrients in a country with some of the highest incidences of malnutrition the world.

In collaboration with national partners, CIAT scientists are currently investigating ways to use improved forages and better on-farm practices to increase guinea pig productivity in DRC, as part of a three-year project funded by Germany's Federal Ministry for Economic Cooperation and Development (BMZ).

Small and easy to conceal, guinea pigs are well-suited to DRC's conflict zones, where extreme poverty and widespread lawlessness means that the looting of larger domestic livestock is commonplace.

The animals are also a relatively low-cost investment and reproduce quickly, with females capable of producing up to five litters per year, a total of 10-15 offspring. They also suffer from fewer diseases than pigs, chickens and rabbits, and in the event of disease outbreaks, their high reproduction rate means populations have a much shorter recovery time.

"We're not sure exactly how guinea pigs got to DRC," said CIAT forage scientist Brigitte Maass, "but they have enormous potential to improve rural livelihoods there."

The BMZ project (footnote) was originally targeted at more traditional monogastric (single-stomached) animals such as pigs and poultry, but now it has been expanded to include guinea pigs as well. It focuses on the potential of using high-quality, highly-digestible forages, such as cowpea (*Vigna unguiculata*), lablab (*Lablab purpureus*), pinto peanut (*Arachis pintoi*) and butterfly pea (*Clitoria ternatea*), to significantly boost the rate of livestock production.

"In DRC, guinea pigs are typically fed kitchen wastes, which makes them a great recycler," continued Maass. "But there is definitely room for improvement by introducing these kinds of highly productive quality forages into their feeding system. We're working hard to establish which are the most effective and suitable."



On-farm practices, such as improved animal management and processing of forages through fermentation (silage), strengthening farmers' links to local and regional markets, are crucial components of the project.

Furthermore, the project also opens up the possibility for so-called "south-south" collaboration. This could see farmers in DRC benefitting from CIAT's ongoing monogastric research – and that of its Colombian partners, the Universidad Nacional (Palmira) and the Universidad del Cauca (Popayán).

"This means our work could be applicable on a much larger scale than we previously imagined," said Maass.



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The next step for Maass and the CIAT forages team is to meet with farmers in DRC to establish "forage-feeding calendars" to help pinpoint times when they experience feed shortages, and help find ways to improve the system. The team has established trials in four villages in South Kivu to assess the suitability of forage varieties. They will also be conducting participatory research and talking extensively to farmers to ensure any recommendations are applicable to the specific prevailing conditions.

"Ultimately it's about more than just raising livestock," said CIAT sociologist Wanjiku Chiuri. "For example, many households use the revenue from selling livestock to pay for school fees, which often means that children are expected to contribute significantly to livestock keeping. By improving livestock productivity, the knock-on effects are improved health and the need for children to spend less time collecting forages, which in turn increase the chances of them being able to attend and concentrate on school."

CIAT's Forages Program leader Michael Peters welcomed the inclusion of guinea pigs in the project. "This is another great example of thinking outside the box, and using our research to create more opportunities for improving rural livelihoods in some of the poorest parts of the world.

"None of the scientists had contemplated guinea pigs as an option in DRC when the project started," he continued. "Now they really could turn out to be indispensable."

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\* Full Project title: More chicken and pork in the pot, and money in the pocket: improving forages for monogastric animals with low-income farmers