

Appraising the extent of cavy culture in DR Congo

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Outline

- Cavy culture in Africa
 - In DR Congo
 - History
 - Distribution
 - Current status
- Key messages
 - Cavy distribution in Africa
 - Cavy population in DRC
 - Information on cavy culture in Africa
 - Potential impact of cavies

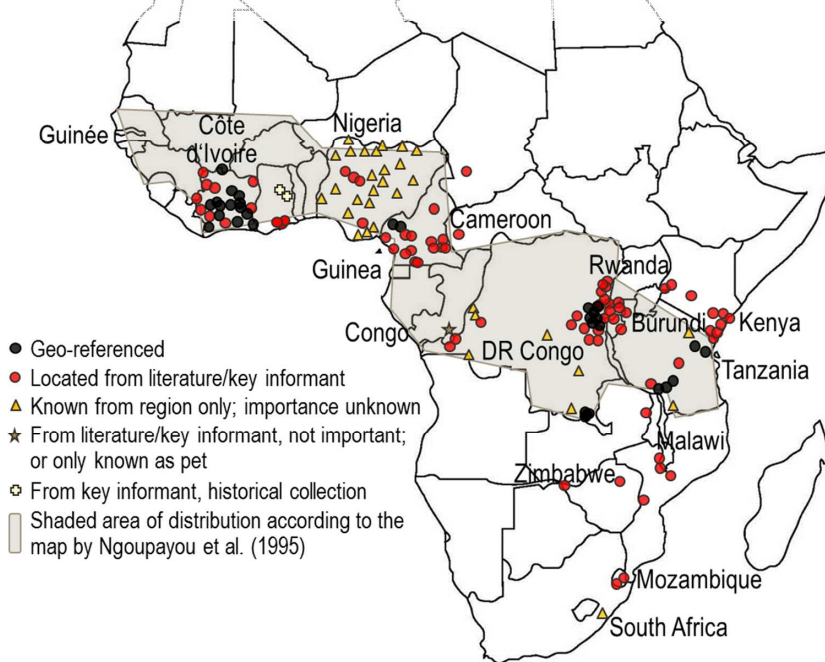
Cavy culture is understood as the raising, production and utilization of the **domestic cavy** (*Cavia porcellus*).

The domestic cavy is also known as 'Guinea pig' or 'cobaye', 'cochon d'Inde' or 'dende', 'simbilis' or other

But – it is not a pig nor does it come from Guinea!

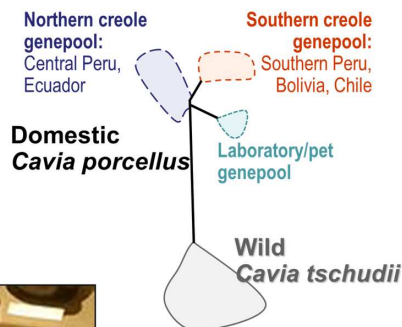


Known cavy distribution in Africa as of July 2014



From: Maass et al. (2014, unpubl.)

Cavies have been introduced into Africa



Genepools identified (modified from Spotorno et al. 2006)



'Cuy' sculpture – Mochica culture, 100-800 AD

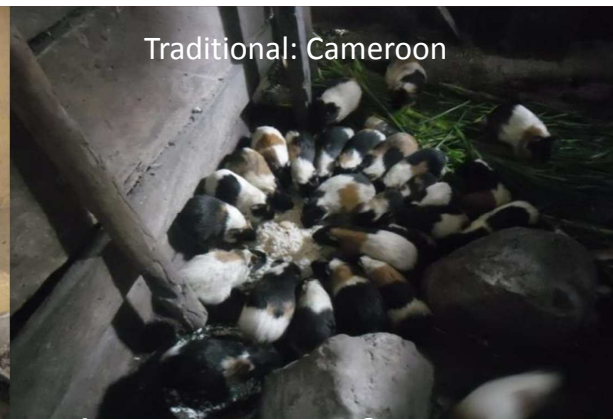


The Last Supper – 'cuy' instead of lamb – painting by Marco Zapata (1753) in a church of Cuzco, Peru

- It is not known, when and where they have been introduced into Africa
- Original from South America
- Domestication started several 1000s of years ago
- Today largest producers
 - Peru: 22 million
 - Ecuador: 11 million
 - Bolivia: 6 million
 - Colombia: 3.5 million



Traditional: Tanzania



Traditional: Cameroon

Cavy raising and production in Africa



Traditional: Sud-Kivu, DRC



Improved: Sud-Kivu, DRC

Photos by TK Metre, F Meutchieye & BL Maass

Roles of cavies in DR Congo



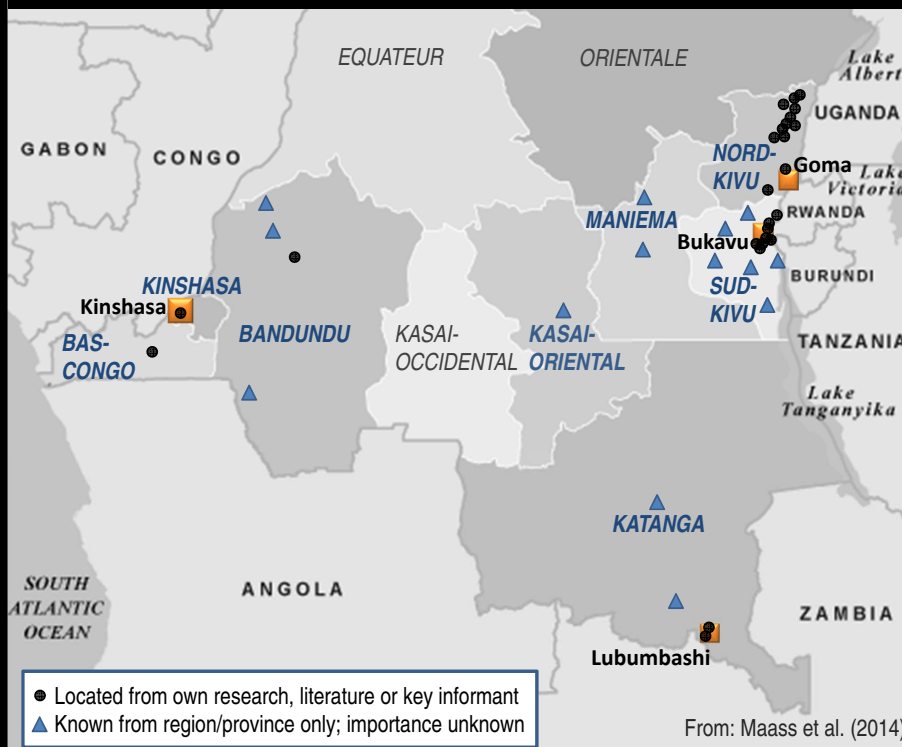
Food and nutrition security – animal protein

Income generation by cavies esp. for education

Natural resource management – manure

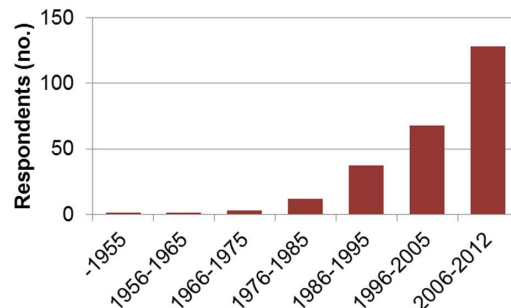
Economic empowerment of women and youth

Known cavy distribution in DR Congo as of July 2013



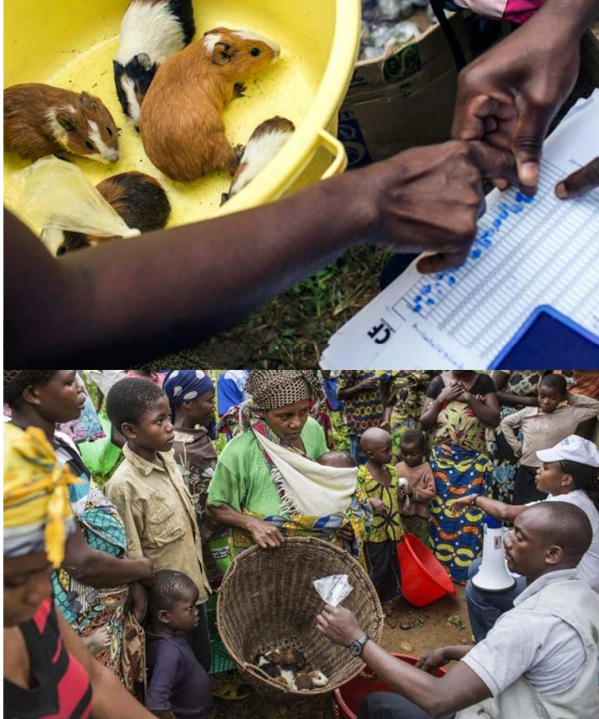
Cavy culture in Sud- and Nord-Kivu

- Origin unknown, but maybe through Christian missionaries in colonial times
- Initially only used cavy blood to fight anemia in children
- During conflict years of 1990s and 2000s, cavy became accepted as meat animal for food and nutrition security



Starting year of cavy keeping as reported by 250 respondents in Sud-Kivu (Cavy project baseline, 2011)

Cavies for food security in 'rehabilitation kits' distributed by NGOs



- During 2006-2012, four NGOs distributed almost 110,000 cavies to >18,000 households in Sud-Kivu
- Various humanitarian and other NGOs continue cavy distribution, today mostly in Nord-Kivu

Action Against Hunger International (ACF) workers get local residents' fingerprints before distributing cavies as part of a food security program in eastern DR Congo (Photos © by NBC)

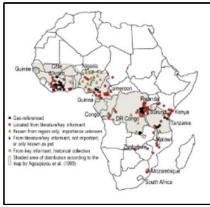
Baseline on cavy culture in Sud-Kivu, DRC



Photo by TK Metre

- Principle motivation for cavy keeping
 - Consumption (65%)
 - Income generation (20%)
- On average 15-16 cavies per household





Message 1

- There are many countries with cavy culture in Africa but almost no numbers exist of
 - Cavy populations available
 - Number of households keeping cavies
 - Impact of cavies on household livelihoods
 - Nutrition, especially children
 - Income, contribution to school education
 - Manure for crops



Estimating the cavy population in DRC

Province	Population (2010) in million	Households (HHs, no.; /5.6) in 1000s	Cavy keeping HHs (%)	Cavies/ HH (no.)	Estimated cavy population (no.)
Bas-Congo	3.79	677	0.5	5	17,000
Kinshasa	7.23	1,291	1.8	5	116,000
Bandundu	8.75	1,563	0.8	5	59,000
<i>Kasai-Occidental</i>	4.96	886	0.0	0	0
Kasai-Oriental	5.65	1,009	3.0	5	150,000
Maniema	1.82	325	0.3	5	4,000
Nord-Kivu	5.26	939	12.0	8	900,000
Sud-Kivu	4.57	816	10.0	8	650,000
Katanga	5.26	939	2.5	5	115,000
<i>Equateur</i>	6.63	1,184	0.0	0	0
<i>Oriental</i>	7.57	1,352	0.0	0	0
Total / mean	61.49	10,981	2.6	7.1	2,011,000

Human population and household estimates from Worldbank (2013)

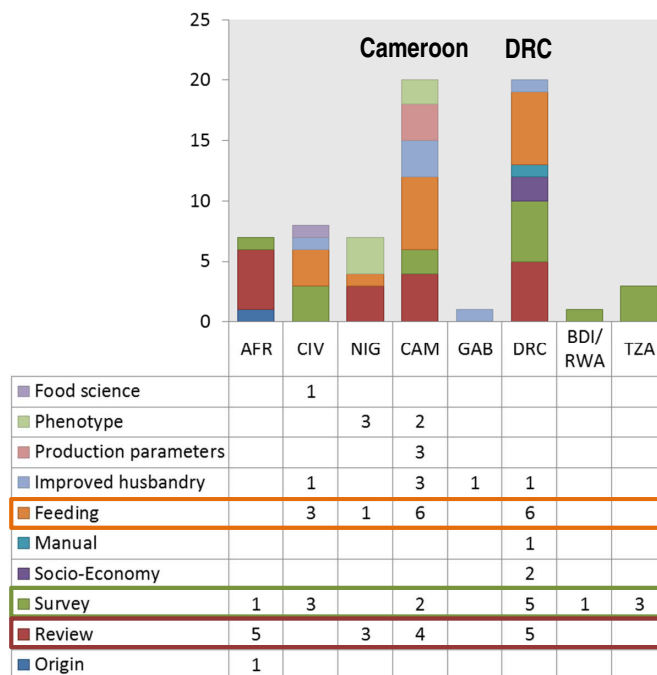


Message 2

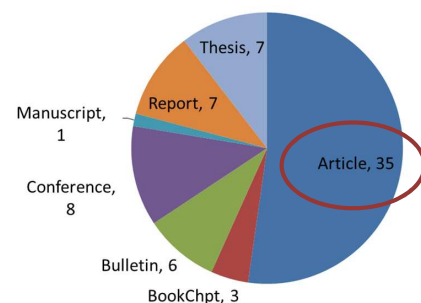
- There are more than 2 million cavies in DRC
 - Improving cavy production will affect between 150,000 and 400,000 largely poor households
 - Especially Nord- and Sud-Kivu provinces keep largest cavy populations
 - Cavies are part of ‘rehabilitation kits’ for displaced families distributed by humanitarian and other NGOs



Publications on African cavy culture 1990s-2013

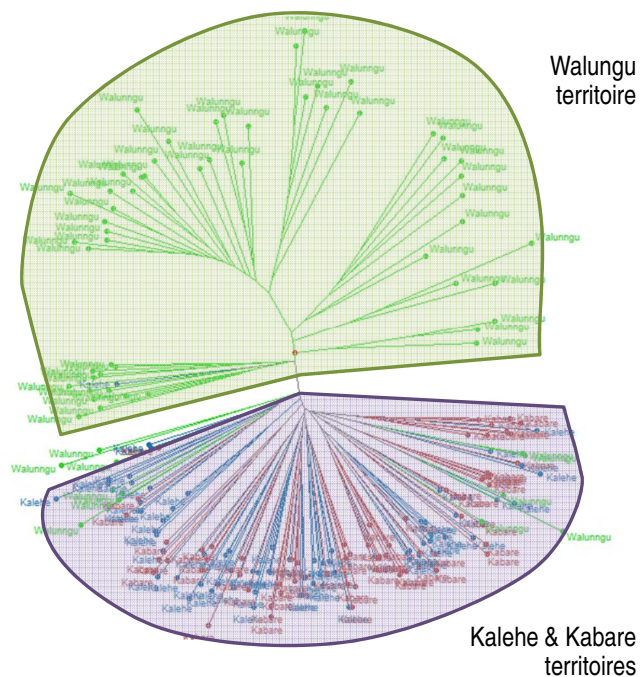
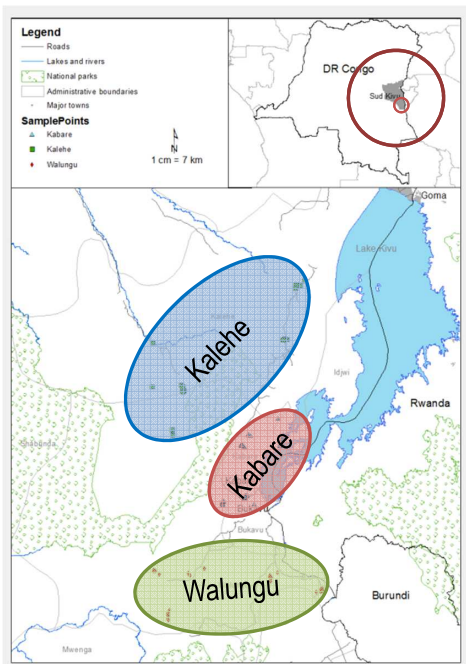


- Publications mainly from Cameroon and DRC
- Results from general reviews, surveys and feeding research dominate
- Only 35 of 67 sources found are research articles

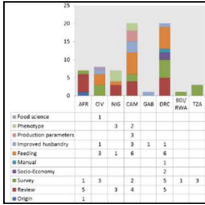




Genotypic variability in Sud-Kivu, DRC



Neighbor joining tree from SSR markers produced by Bertin Bisimwa et al. (2013, unpublished)



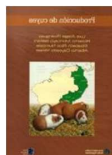
Message 3

- There is extremely limited scientific information available on cavy culture in Africa
 - Cameroon and DRC are leading regarding available publications
 - In Sud-Kivu certain variability exists
 - Phenotypes
 - Genotypes – fall into two groups, inbreeding is high
 - Only small part of Sud-Kivu sampled



Needs for research + capacity building

- Cavies as livestock are a neglected species
 - Little support from institutions, incipient inclusion in curricula
- Unrestricted mating + lack of reproductive management of cavy flocks lead to high inbreeding rates, resulting in
 - Inbreeding depression – associated with reduced size, poorer reproduction and greater disease susceptibility
- Limited marketing channels available, the cavy value chain is undeveloped
- Information on improved cavy husbandry and advances in cavy culture from South America almost only in Spanish
 - Consequently, practically inaccessible due to language barrier





Message 4

- Cavy culture appears to be a very appropriate technology that has widely been adopted in Africa despite the (almost) complete neglect in research and development
- Large knowledge gaps exist
- Advances in cavy culture from South America are inaccessible due to language barrier



Acknowledgements

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