

Business figures for medium scale cricket rearing in Africa

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Business opportunity

Insect farming shows great potential for growth and scalability as the market is rapidly increasing for novel protein sources from farmed insects. Estimates show that the market for farmed insects for human food and animal feed in Africa will be worth up to US\$8 billion by 2030 (World Bank, 2021). The Flying Food Partnership developed a practical approach with sound business model for setting up the cricket business for food application. Insect farming provides tremendous health, social, economic, climatic, environmental, and food security benefits in Africa.

Why crickets?

- ✓ Crickets are **tasty, affordable and very nutritious**. They taste a bit nutty and have a high protein content (65% of dry weight); twice as much as beef! Crickets contain all 9 essential amino acids and are a rich source of iron and calcium. Crickets are a natural nutrition power house!
- ✓ Cricket farming is a **climate friendly** alternative for conventional cattle, pig or chicken farming. A cow consumes 400 kg of feed, 10.000 liter water and has high emission of greenhouse gasses, where for 1 kg of crickets just 2 kg of feed and few liter of water is required without very limited emissions.
- ✓ Crickets form a **novel type of protein**. In 2021 the EU accepted crickets as novel food. Using insects directly as food applications is much more efficient compared to using them for feed. How to present crickets to end-consumers is dependent on local eating habits and requires thorough market research. But our experience is that **cricket powder** is most successful as nutritious additive to porridge, bread and cookies;
- ✓ Crickets are **easy to rear** and provides a **sound business case**.

Approach

A medium cricket farmer will build a cricket farm of 70 m² containing 500 crates with 2,500 crickets each. With a team of 6 people you deliver 63 million eggs and 3,400 kg of fresh crickets annually. This medium farm will process the crickets, like blanching, drying, grinding and packaging and has links with retail and food processors. This medium cricket farm can handle an out grower model and will link to 50-100 small holder farmers. These farmers have a small cricket farm with 30 crates in their yard as side-activity. They just have to spend 1 hour per day to take care of the crickets; a perfect add-on on their regular agricultural activities. The medium farmer trains and provides eggs to the small holder farmers and the smallholders deliver (part of) their yield to the medium farmer for processing and sales.



Market opportunities

Crickets can be sold to the market in different food applications:

- Fresh, blanched crickets – fried at home when applying in sauce at rice or samosa
- Fried – as snack in small sachets, plain or spiced with herbs or chopped in samosa
- Powder – dried, grinded and applied to fortify porridge bread and cookies.



www.flyingfoodproject.com

Key figures of a medium cricket farm

Establishing a cricket farm of 70 m² requires an investment capital of € 40.000. The business case is twofold: selling eggs to small holder farmers and selling adult crickets for human consumption. Using a rearing system with 500 crates 3.400 kg of fresh crickets and 63 million eggs can be produced annually. Hundred smallholder out growers can supply an extra 20,000 kg of fresh crickets annually.

Operational costs for staffing 6 employees and feed are estimated on € 25.000 annually. Due to the cycle time of the crickets it takes a while to fill your system and to have the first yield. We calculate a success ratio of 30% in year 1, 60% in year 2 and 100% in year 3.

In year 1 you have a turnover of € 14,000 and in year 5 when you and all 100 out growers are at full production, you have an annual turnover of approximately € 300,000. Based on our experiences in Kenya and Uganda we see a sales price of € 5 per kg of fresh crickets and € 19 for a kg cricket powder. We calculate with 25% of the yield sold fresh, 25% sold fried and 50% sold as powder.

Net result will be € 192,000 per year.

Payback period is 2,27 year with a NPV of € 273,000.

PROFIT & LOSS							
For cricket farming with 500 crates							
	YEAR1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7
	EUR	EUR	EUR	EUR	EUR	EUR	EUR
Annual turnover	14.129	30.958	230.724	278.279	300.032	300.032	300.032
Costs of turnover	0	0	0	0	0	0	0
Gross margin	14.129	30.958	230.724	278.279	300.032	300.032	300.032
Feed	1777	1777	1777	1777	1777	1777	1777
Labour	16206	16206	16206	16206	16206	16206	16206
Housing	0	0	0	0	0	0	0
Energy	400	400	400	400	400	400	400
Water and waste	250	250	250	250	250	250	250
Other process costs (incl packaging/ transport costs for training)	2500	2500	2500	2500	2500	2500	2500
Total operational costs	21133	21133	21133	21133	21133	21133	21133
EBITDA	-7.004	9.826	209.591	257.147	278.900	278.900	278.900
Depreciations	3.727	3.727	3.727	3.727	3.727	3.727	3.727
EBIT	-10.730	6.099	205.864	253.420	275.173	275.173	275.173
Interest loan	0	0	0	0	0	0	0
EBT	-10.730	6.099	205.864	253.420	275.173	275.173	275.173
Corporate tax	-3.219	1.830	61.759	76.026	82.552	82.552	82.552
Net result	-7.511	4.269	144.105	177.394	192.621	192.621	192.621