

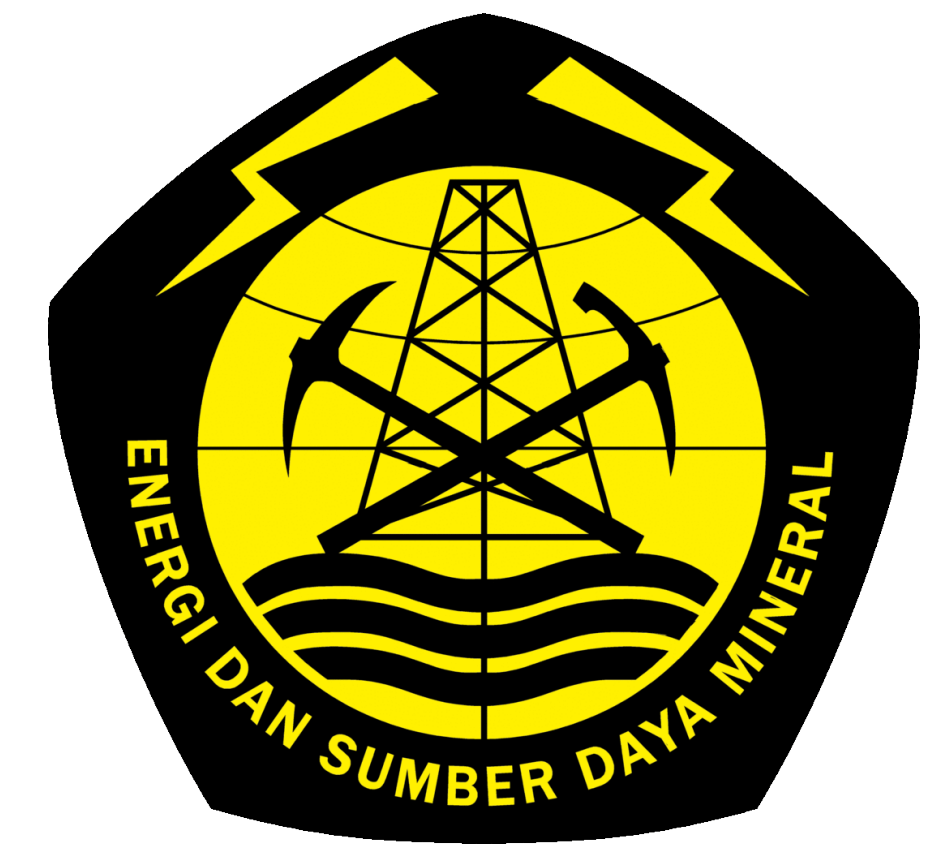


DEVELOPMENT OF AN INTEGRATED CATTLE FARM ON AN EX-COAL MINING AREA

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Introduction

- Ex-coal mining in Indonesia is able to be functioned as cattle farm after mine-out.
- Beef cattle was imported to comply about 26% beef demand in 2010-2014.
- Extended livestock area to apply cattle breeding strategy can be purposed on ex-coal mining.
- This study aims to define the birth rate and weight increment of cattle which are farmed on ex-coal mining area.



Fig 1. Coal mining in PT Berau Coal, Berau Regency, East Kalimantan Province, Indonesia



Fig 2. Ex-coal mining land has been rehabilitated and utilized as Integrated Cattle Farm which has 5 ha for livestock facility and 191 ha for grazing area

Material and Methods

- Primary data of cattle growth in from Integrated Cattle Farm in PT Berau Coal, East Kalimantan Province, Indonesia.
- Analyzed using descriptive statistics.

Results

- The birth rate of the calves:
 - 0.62% for the Brahman Cross cattle (*Bos indicus*).
 - 0.47% for Balinese cattle (*Bos javanicus*).
 - 0.82% for Donggala cattle (originated from *Bos indicus*).
- The weight increment of the Brahman Cross's cattle:
 - 0.10 kg/day for intensive farming (in the cowshed).
 - 0.30 kg/day for semi-intensive farming (grazing).

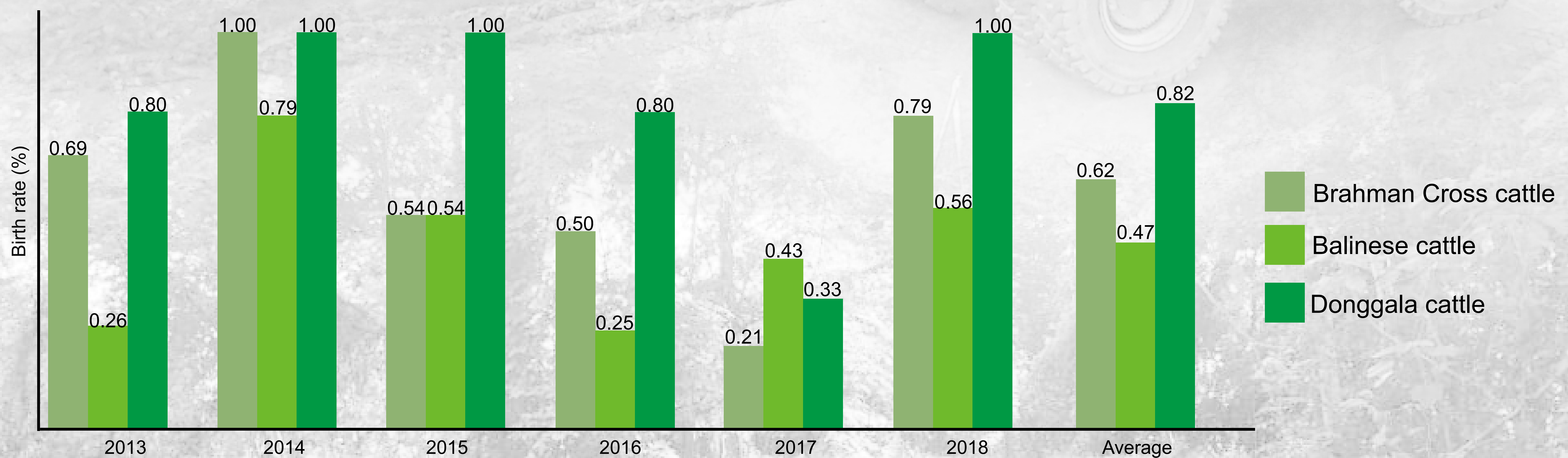


Fig 3. The combination between intensive farming in the cowshed and semi-intensive farming (grazing) are applied with planted *Pennisetum* sp., *Brachiaria* sp. and *Leguminosa* Cover Crop (LCC) as the cattle feed.

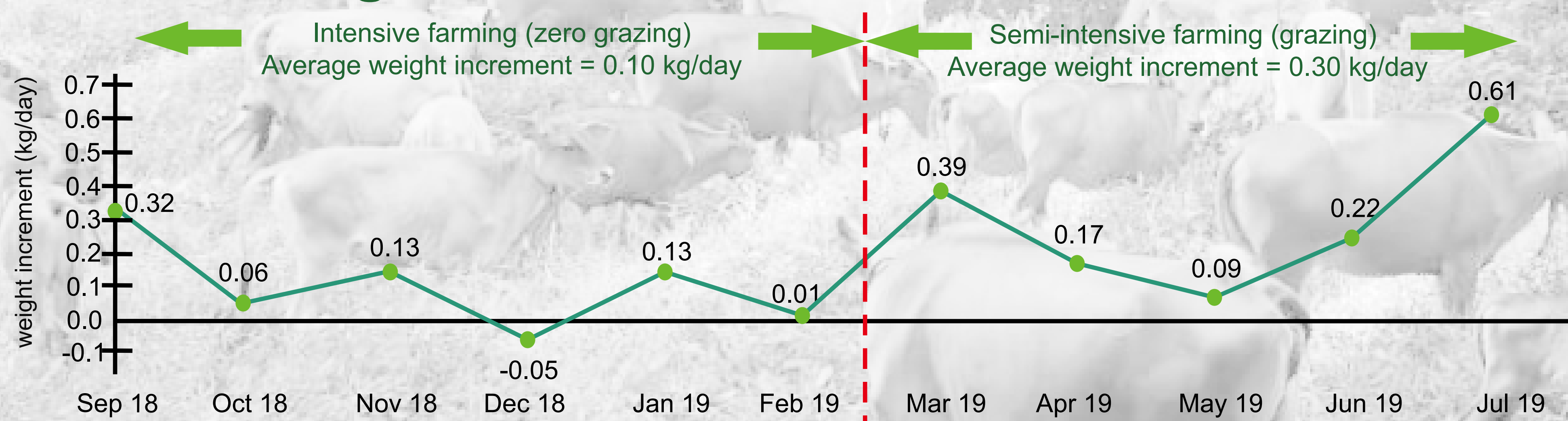


Fig 4. The process of cattle weight data measurement

Average birth rate



The weight increment of Brahman Cross cattle



Conclusion

- Donggala cattle has the highest birth rate.
- Semi-intensive farming is more effective and efficient than intensive farming to gain more weight of cattle.
- The development of cattle farm on ex-coal mining is a bridge of the gap between non-renewable and renewable resources.