



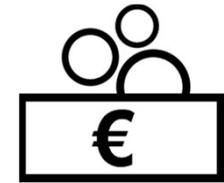
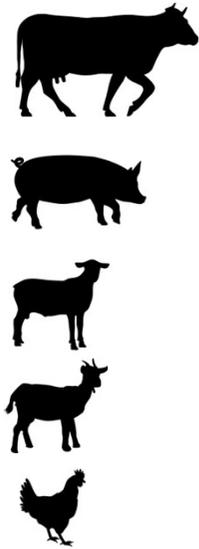
Dtreo data-driven decisions in sheep and goat industries

S. Savoia, B. Santos, S. Liebergreen, E. Ooi, S. Kumar, M. Teviotdale, P. Amer & T. Byrne

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The challenge



Limitations in sheep and goat operations



General

Small scale breeding initiatives

Low individual animal value

Hard to distribute the development and operating costs of a bespoke data platform



Developing Countries

Lack of infrastructure

Fragmented production systems

Absence of basic tools for data capture

Limited farmer support for advisory services and genetic improvement programs



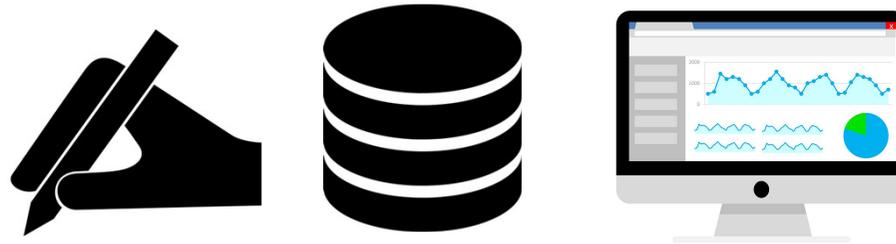
Developed Countries

Absence of standardized record-keeping systems

Low accuracy of data recording

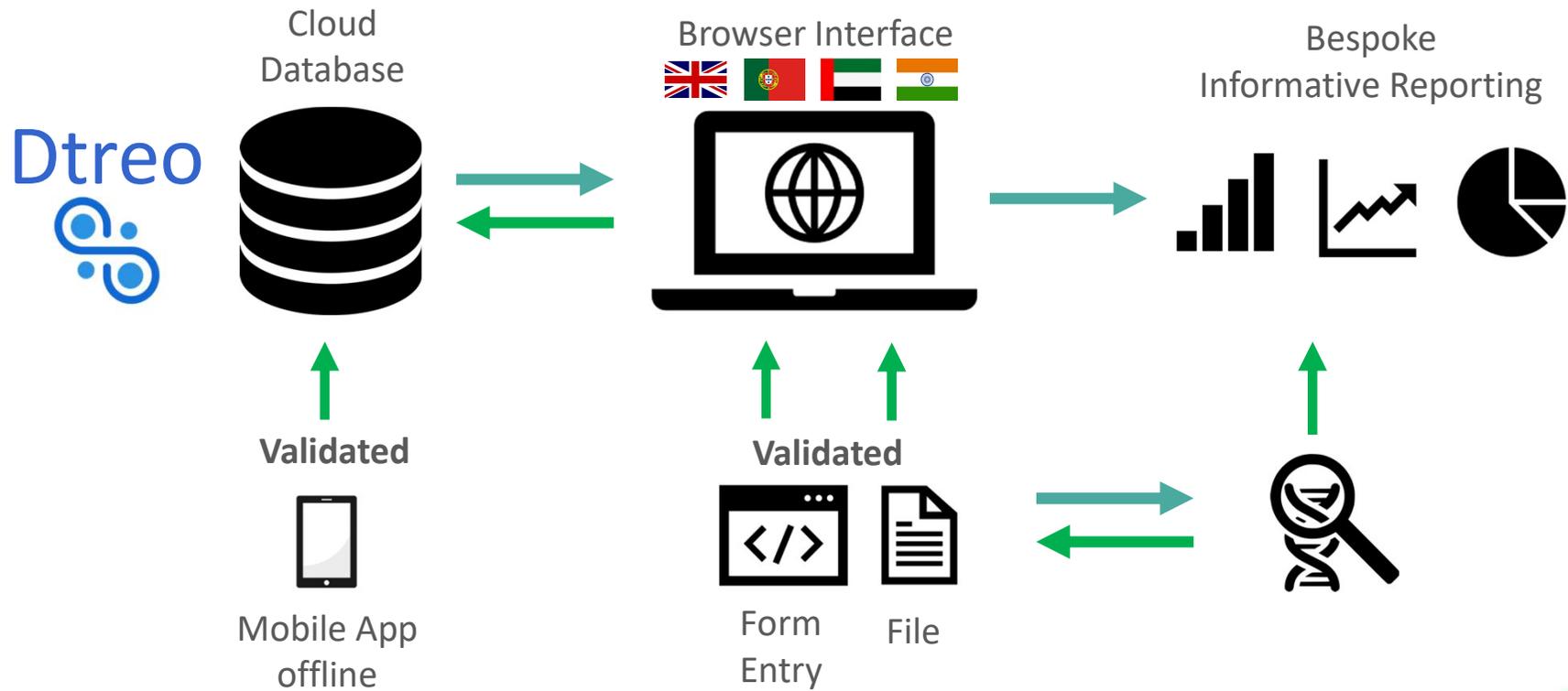
Unprofitable sheep and goat production and the perceived low efficiency of genetic selection programs

The good record-keeping system



- Suited to the conditions in which it is used and the expected use of the data
- Flexible – fulfils the needs of farmers in different production systems
- Enables farmers and the wider supply chain to make informed data-driven decisions

Dtreo, cloud-based data-recording platform



Dtreo, flexible data structure



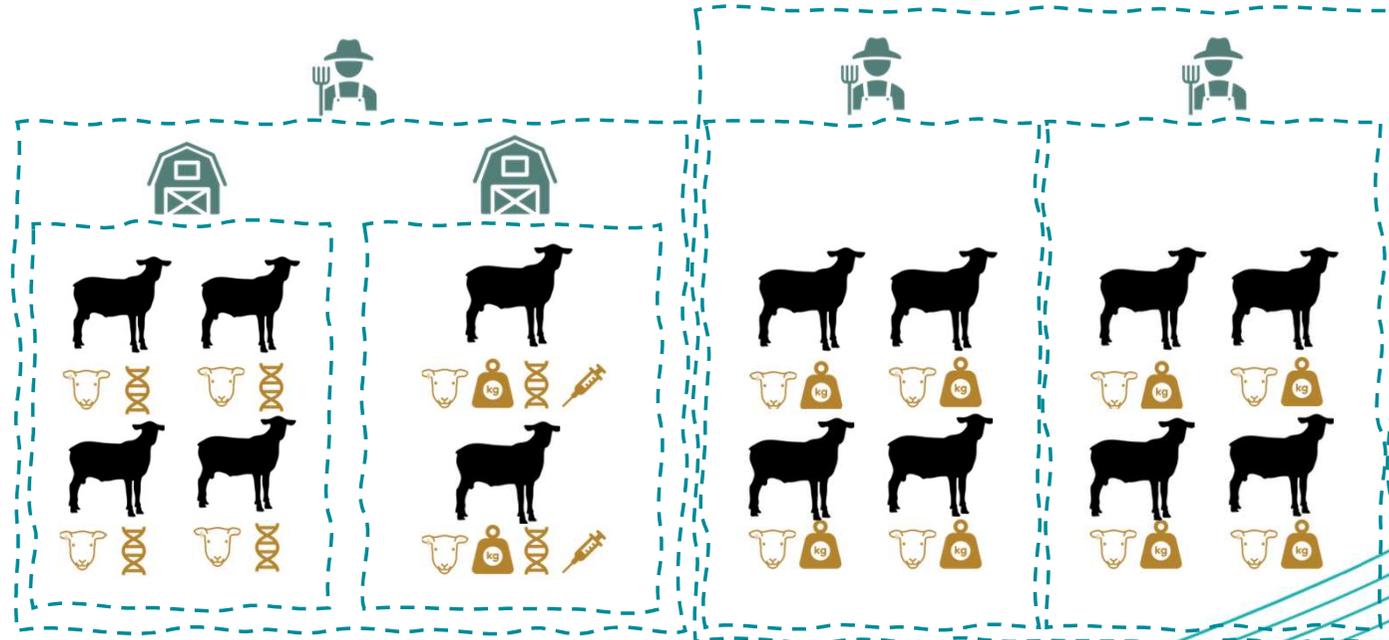
Core Entity



Grouping Entities



Events/Records



Case Studies

Community-based breeding programs (CBBP)

Ethiopia

Programs initiated by partnership between ICARDA, ILRI, and EMBRAPA, further supported by MFAT

- Project aim: Support communities by improving sheep and goat performance and addressing market demand through the implementation of sustainable breeding schemes.

Project Mesha

India (Bihar)

Project funded by Bill & Melinda Gates Foundation and Agha Kan Foundation

- Project aim: Improve the quality of life of women by improving the productivity of their goats

Sheep Dairy Operation

New Zealand

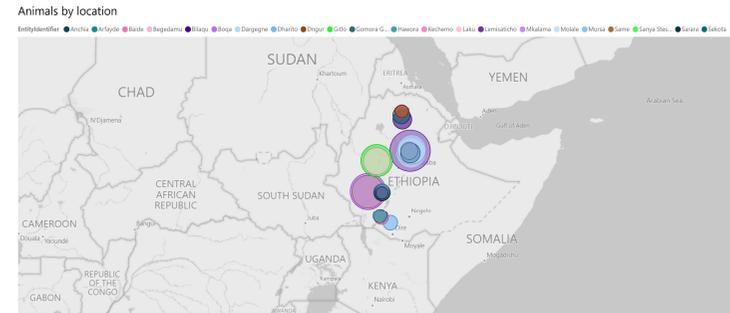
Project initiated as a commercial partnership

- Project aim: Build a breeding platform that integrates data collection on-farm, genetic evaluations, and selection indexes

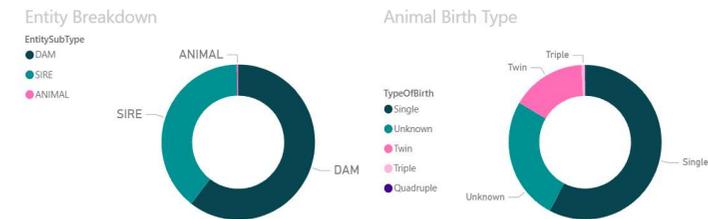


CBBP, Ethiopia

- Dtreo has allowed the collection, storage, and reporting of uniform data for selection decisions.
- 100,000 animals, 125,500+ live weight records, and 23,000+ milk records.
- Data collection is ongoing in 24 CBBP sites across Ethiopia.
- Positive impact on animal performance, market participation, and income/livelihoods.
- Implementing CBBPs in other pastoral communities is underway.



CBBP Analytics Dashboard



EntityIdentifier	Village	Tag	Date Weighed	Weight	Weight Type
Anchia/21700623/2018	Anchia	21700623	13/04/2018	2.50	Birth weight
Anchia/21700623/2018	Anchia	21700623	12/07/2018	11.00	3 months weight
Anchia/21700624/2018	Anchia	21700624	13/04/2018	2.00	Birth weight
Anchia/21700624/2018	Anchia	21700624	12/07/2018	10.50	3 months weight
Anchia/21700625/2018	Anchia	21700625	16/04/2018	3.00	Birth weight
Anchia/21700625/2018	Anchia	21700625	15/07/2018	14.00	3 months weight
Anchia/21700625/2018	Anchia	21700625	13/10/2018	21.00	6 months weight
Anchia/21700626/2018	Anchia	21700626	20/04/2018	3.00	Birth weight
Anchia/21700626/2018	Anchia	21700626	19/07/2018	16.00	3 months weight
Anchia/21700626/2018	Anchia	21700626	17/10/2018	23.00	6 months weight
Anchia/21700627/2018	Anchia	21700627	20/04/2018	2.50	Birth weight
Anchia/21700627/2018	Anchia	21700627	19/07/2018	15.00	3 months weight
Anchia/21700627/2018	Anchia	21700627	17/10/2018	20.00	6 months weight
Anchia/21700628/2018	Anchia	21700628	21/04/2018	3.00	Birth weight
Anchia/21700628/2018	Anchia	21700628	20/07/2018	20.00	3 months weight
Anchia/21700628/2018	Anchia	21700628	18/10/2018	27.00	6 months weight
Anchia/21700629/2018	Anchia	21700629	21/04/2018	3.00	Birth weight
Anchia/21700629/2018	Anchia	21700629	20/07/2018	17.00	3 months weight
Anchia/21700629/2018	Anchia	21700629	18/10/2018	26.00	6 months weight



Project Mesha, India

- User interface released in Hindi
- Validated data used in an overall index score for buck kids (100 days weight + dam's traits).
- + 26.8% average daily gain of selected bucks' progeny.
- Results motivated villages (4 in 2018, 16 in 2021) to be tied to the program and demand for selected bucks increased.

Events Recorded

Name	Number of Entries
Animal Update	47
Owner Update	1598
UnTagged Doe Mating	71
कीड़े की दवा खिलाना - Deworming	112
खरीदे गये बकरे का विवरण - Purchase Buck Details	22
चयनित प्रजनन बकरा मूल्यांकन - Breeding Buck Assessment	29
निष्कासन घटना - Removal Event	592
पशु/बकरी जोड़े - New Animal	2215
पाल खिलाना - Matina	166
Total	14712

Recorded By

Account

Entry Time Summary

Village	2020	2021	Total
Yadunathpur	880	81	961
Sema		274	274
Rohua Rajaram		283	283
Rohua Bimarayan	1133	340	1473
Rohua Apuchh	8	493	501
Ram Das Majhali		744	744
Rajwara Bhagwan	942	257	1199
Mohammadpur Bhopat	1549	29	1578
Mansurpur	672	101	773
Lalse	446	246	692
Kihara Raghu		455	455
Kafen Chaudhary	1718	535	2253
Jagan Majhali	917	342	1259
Gopalpur Tarura	158	50	208
Gangti	190	249	439
Dumari	18	676	694
Dihuli Isaq	54	382	436
Boaria	46	482	528
		9	9
Total	8731	6028	14759

Kid growth rate (grams/day) by village - Least Squares Means

Village	Count	Mean	SE
Boaria	9	78.05	7.40
Dumari	20	52.47	5.85
Gangti	17	89.13	8.83
Jagan Majhali	97	59.12	5.79
Kafen Chaudhary	228	71.91	5.99
Lalse	40	69.51	6.98
Mansurpur	51	64.95	6.02
Mohammadpur Bhopat	119	61.86	5.72
Rajwara Bhagwan	28	63.41	6.28
Ram Das Majhali	49	64.83	6.06
Rohua Apuchh	42	69.73	6.01
Rohua Bimarayan	108	63.93	5.76
Rohua Rajaram	7	67.43	7.81
Yadunathpur	105	53.08	5.88
Total	1000		

Litter size influence on growth rate (grams/day)

Animals/Litters/Weighting	Count	Doe%	Percentage of Does	Mean	SE
0	2	1	0.20	73.52	21.67
1	108	120	28.10	76.16	3.90
2	567	240	53.20	65.89	3.80
3	278	88	19.10	58.87	3.85
4	34	10	2.20	55.57	4.07
Total	1011	459			

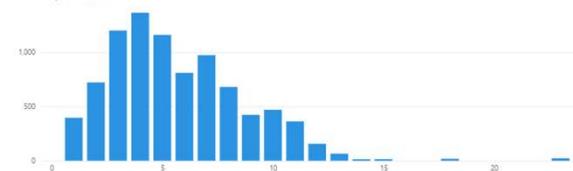
Dam group influence on growth rate (grams/day)

Dam Group	Count	Mean	SE
2nd or later or unknown	753	69.40	5.52
Firm	66	82.52	5.73
Total	819		

Village differences in doe weights (kg)

Village	Count	Mean	SE
Mohammadpur Bhopat	80	26.15	1.69
Kafen Chaudhary	71	27.68	1.79
Mansurpur	28	25.19	2.27
Rohua Bimarayan	108	25.14	1.72
Gangti	49	24.36	1.84
Boaria	46	23.59	1.85
Lalse	69	23.24	1.81
Yadunathpur	84	22.01	1.81
Total	533		

Kid Weight Counts



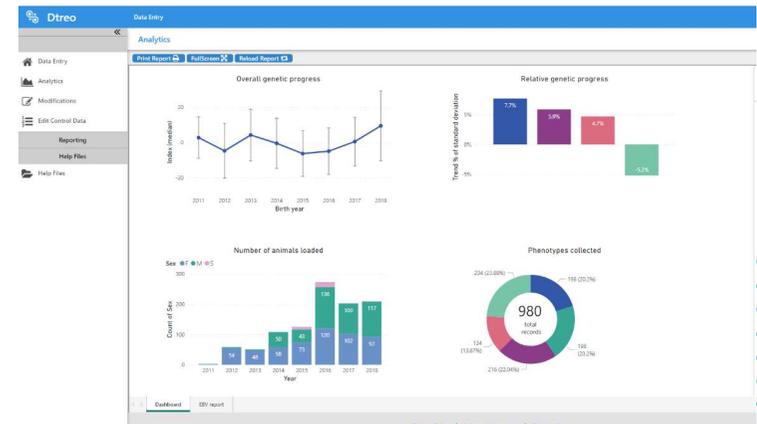
Village differences in doe weights (kg)

Village	Kid Growth Rate Mean	Doe Weights
Boaria	78.05	23.59
Gangti	89.13	24.36
Kafen Chaudhary	71.91	27.08
Lalse	69.51	23.24
Mansurpur	64.95	25.19
Mohammadpur Bhopat	61.86	26.15
Rohua Bimarayan	63.93	25.14
Yadunathpur	53.08	22.01



Sheep dairy, New Zealand

- Dtreo used as breeding platform for data collection on-farm, genetic evaluations, and selection indexes.
- Delivery of genetic evaluations with high level of engagement from commercial suppliers.
- Dtreo is now set up with the goal of improving commercial suppliers' phenotypic culling decisions, and novel traits data recording.



Take home messages

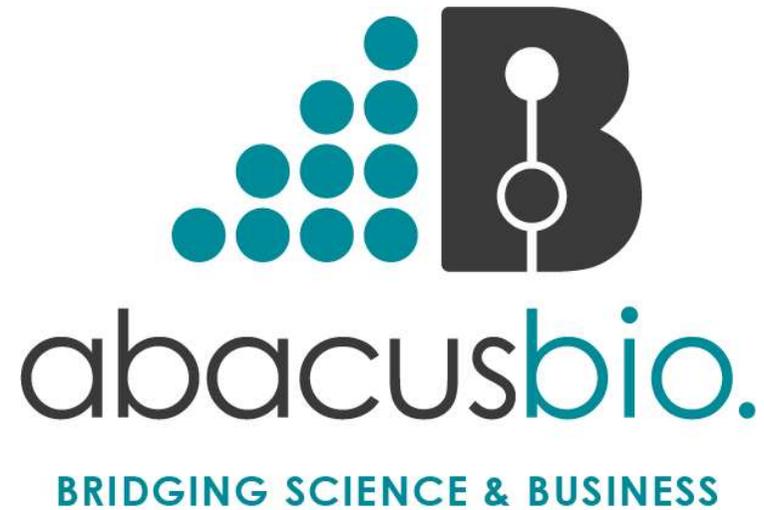
- Management decisions at farm level, implementation of genetic improvement strategies and market access are affected by **availability of quality data**
- Farmers are supported in the decision-making process by the availability of **informative and straightforward reports**, obtained by analysing validated data
- Combining data recording, analysis, and reporting in one flexible digital platform has **increased livestock productivity** in different situations



Thank you

Please, feel free to contact
info@abacusbio.co.uk or info@abacusbio.co.nz
if you are interested in Dtreo.





*Empowering our clients with science and
business intelligence to grow resources and
food for a more sustainable world*