Terms of Reference

Reducing kid loss phase 1 – *Select and protect*

Summary:
MLA and the Goat Industry Council of Australia (GICA) are seeking to fund phase one of a program to assist in understanding and addressing the issue of kid loss. Producer engagement and consultation are key to the success of this project as is developing data on the prevalence and causes of kid loss.

The extent and significance of kid mortality in the goat industry is still largely unknown. While there is documentation available to indicate neonatal losses may be as high as 30-40% in some instances, other reports and surveys suggest that kid loss and reproductive performance overall are not key profit drivers or perceived to be an issue of importance, at least at the time they were written. This is inconsistent with work in both the beef and sheep meat industries where all economic modelling and key performance indicators would suggest that progeny loss/survival is a major driver of profitability. For a summary of past goat work, please see Appendix 1.

Generally, it is felt that significant gains in the area of reproductive performance can be achieved by ensuring breeding animals that conceive don't fail to produce a weaner. Reproductive wastage is assumed to be a multifactorial problem and through this project it may become apparent that nutrition and husbandry are more important contributors to losses during pregnancy and between birth and kid marking, than infectious diseases or genetics.

Background
There are a number of factors within the goat industry which complicate industry's understanding and view of the issue of kid loss including:

- the prevalence of harvesting operations where the reproductive performance of the herd is secondary to the efficiency of capture
- the extensive nature of rangeland breeding operations
- the intensive nature of small stud operations where non-viable kids are commonly saved
- a lack of hard data regarding the extent of the problem.

However, because MLA is currently funding similar projects in the sheep area, there is an excellent opportunity to undertake work in the southern goat producing areas where kid and lamb loss research could be conducted in parallel.

Outcomes from this project

- An understanding of baseline reproductive wastage for the industry including neonatal losses and weaning rates which can be monitored over time for improvements in productivity and profitability
- Improved producer awareness and management of kid loss

Project Objectives (phase 1):

1. Undertake a world-wide literature review on kid loss and identify the major issues which are likely to be causing losses across the various Australian production systems.

2. Investigate the past and current projects relating to lamb loss in Australia and identify major factors which have been discovered and which are likely to have a shared commonality with kid loss.
3. Survey state animal health laboratories in Australia to ascertain the level of submissions relating to abortions and kid loss over the past 15 years.
4. Develop a list of goatmeat producers who have either good reproduction data and/or have encountered significant losses and interview these producers to identify hot spots/regions where problems exist. Where appropriate, compile and analyse the producer's raw data to indicate loss levels.
5. Use the information collected above to:
    a. estimate the cost to industry of kid loss
    b. provide 5-6 detailed goatmeat producer case studies to demonstrate at farm level the impact of kid loss (using producers contacted as a part of objective 4) including common sense key messages about what data to collect on farm to establish the mortality rate of kids
    c. make recommendations to MLA on what research or extension work regarding kid losses should now occur

It may be that this work determines the primary causes of death are mis-mothering, exposure, starvation or predation. Should this be the case, the underlying cause of the problem must also be investigated. For example is the true cause infection, genetics, nutrition or husbandry and if so what can producers do about this.

Applications are presently only called to fulfil phase 1 (above) of this program. To help set the scene it should be noted though that the results of phase 1 will determine the need for additional work. Phase 2 of the program may include on-farm applied research including diagnostics, autopsies and data recording as well as testing treatments/interventions to evaluate their effectiveness and cost benefit.

Phase 3 may then be focused around extension and capability building. This may include development of a communication and adoption program to address the lack of awareness and involvement in managing kid loss, for example something like Lambs Alive.

Method

Opportunities to strengthen capacity in animal health and production by providing postgraduate training opportunities and retaining exceptional PhD graduates within the goat industry will be looked upon favourably. At an individual producer level, being involved in this project should add value to their business (as incentive to be involved).

Process:

The Expression of Interest should be submitted using the MLA Full Application form, supplemented with appendices as required, to address any specific requirements. To access the project application template, click here. In particular, the proposal should:

1. Detail the approach that will be adopted to address the project objectives.
2. Detail the specific work activities proposed and timelines for their achievement.
3. Provide details of the information/data to be collected, collated and assessed and how these activities will be undertaken.
4. Include a detailed and fully costed budget that covers all the resources required to undertake the work, including details of basis for charging (daily fees, number of days, expenses, etc.).
5. Propose a payment schedule, taking account of the following:

a. Progress payments may be negotiated against project milestones if the size and timescale of the project warrant this. The proposal should propose milestones and payments if required.
b. A minimum of 20% of the project budget must be retained for payment against the final milestone.
c. Payment of fees will be upon MLA acceptance of the attainment of the project milestones.

Selection Criteria:
Applications will be reviewed by MLA and GICA, and selection of the successful proposal will be based on assessment against the following criteria:

1. Soundness of the method proposed to achieve the project objectives;
2. Demonstration of the applicants knowledge and understanding of the relevant issues;
3. Track record of the applicant and proposed team members; and
4. The project budget, delivery timeline and assessed value for money.

Reporting Requirements:
The successful applicant will provide milestone reports (if required) and a final report giving full details of the results of the work. Milestone and final reports will be prepared in line with MLA report guidelines.

In addition to MLA standard reports the following will also be provided:

- a copy of all project data, including meta-data (de-identified)
- the applicant should allow for a half-day presentation/meeting with GICA to review project results and recommendations as well as 1-2 webinars to communicate results to the wider industry
- the applicant should allow for a meeting with MLA staff at project inception

Confidentiality and IP:
Where further information is available which may assist the successful applicant in meeting the requirements of the project, MLA will provide such information to the successful applicant.

All data and cited references must be acknowledged appropriately in the final publication and it is the sole responsibility of the applicant to ensure copyright laws are not breached. The successful applicant will be required to enter into a standard agreement with MLA. This project will be funded with goatmeat levies. Potential applicants must identify any background IP they are bringing to the project.

Conflict of interest:
Applicants, research teams or subcontractors with any potential conflicts of interest, should thoroughly outline these in this application, including how they propose to manage them, if applicable.

Further Information:
If you have questions regarding this project, contact: Julie Petty, Project Manager Goat Industry on 0411 680 516 or jpetty@mla.com.au

Project Proposal Submissions:
Proposals must be lodged electronically as Word document to: applications@mla.com.au
Proposals must be received by close of business Monday 13 August 2018.

Appendix 1 – summary of work to date

What follows is a short summary of some of the reports produced during the past 20 years which discuss issue of kid loss in Australia.

2004: Barry Norton "The role of the Boer goat in the development of the Australian goat meat industry"

This project reported that survival of all kids from birth to weaning was high (90%) with few differences between doe genotypes. This work covered various genotypes but was performed at Gatton under optimal conditions and under close supervision. The cumulative measure of doe productivity is the percentage of kids weaned per doe joined (weaning percentage) and it ranged from 128-138% for 75% Boer, Saanen x feral and feral does to low values of 64-93% for kids from does with Angora parentage. It stated that lower values than this are indicative of problems with fertility or more likely with higher mortalities between birth and weaning, and need addressing through management. However, the economic importance of reproductive rates in this study found that weaning percentage is a critical determinant of profitability, suggesting that improved reproductive management and increased kid survival alone could provide significant improvements in gross margins per doe.

2012: Allie Jones "Rangeland goat production in western NSW"

Seven large goat operatives in western NSW were involved in this project and the producers who were interviewed identified labour, education and markets as the big issues facing the industry. Other factors included government policy that they considered restricted or added costs to food production, a lack of interest in agriculture from the next generation and a limited understanding of the rangeland goat as a resource by the wider community and industry representatives. It would appear that productivity, and more specifically kid loss, were not canvassed in this study as issues of major concern and therefore the omission may have been simply an oversight.

2012: Taryn Baker, Claire Gutsche and John Squires "Goat Producer Attitudinal Survey and Analysis (B.GOA.0042)"

This survey was implemented primarily as an online survey. The respondents for the online survey were contacted via email, phone calls, targeted industry campaigns and industry groups. On the surface, it appears that the 164 respondents across all states of Australia represented a broad coverage of the industry but only 90,564 goats were covered and the medium herd size was 152 compared to the mean which was 551. The one herd of 15,500 head that participated in the survey significantly skewed the findings. The project provided an insight into the major issues of perceived importance in three different production systems:

- Managed herd with a meat focus: this group considers the biggest impacts on goat production to be climate, nutrition and predation
- Managed herd with a meat focus and opportunistic harvesting: the main frustrations this group expressed were marketing, prices and predation
- Opportunistic harvesting: climate is considered to be the major factor which has impacted producers' goat harvest over the last 10 years, with breed fertility and legislation also posing significant threats. Predation and animal health are typically not regarded as big issues for opportunistic harvesters.

The report then prioritized issues that needed a greater understanding and neither reproductive performance or kid loss were mentioned.

2013 – San Jolly "Goat nutrition in Australia - Literature review"

While this review by San Jolly was not specifically designed to look at reproduction, it reports some significant findings in various parts of the report e.g.:-

- Page 15: "Kid mortality is reportedly high at around 40%; mothering ability of does is generally poor, with chronic lameness and parasite infestation being major impediments to productivity and welfare."
- Page 35: "The number of goats harvested from the rangelands varies according to seasonal conditions such that it must be assumed that the fertility of the breeding doe declines, and kid mortality increases in line with a decline in feed quality."
- Page 42: "Boer producers report winter mortality rates of pre-weaned kids of up to 40% as being the norm."
- Page 50: "It is likely that the high kid mortality rates and sub-optimal reproductive rates of intensively managed does are in part due to a lack of available ME; this requires further investigation."
- Page 80: "According to The Department of Primary Industries, Parks, Water and Environment in Tasmania, goat kids are highly susceptible to iodine deficiency and attribute their high mortality rate to cold stress secondary to the deficiency."

2014: Anthony Parker, Daniel Nogueira and Prof. Lee Fitzpatrick – "Meat Goat Producer Survey"

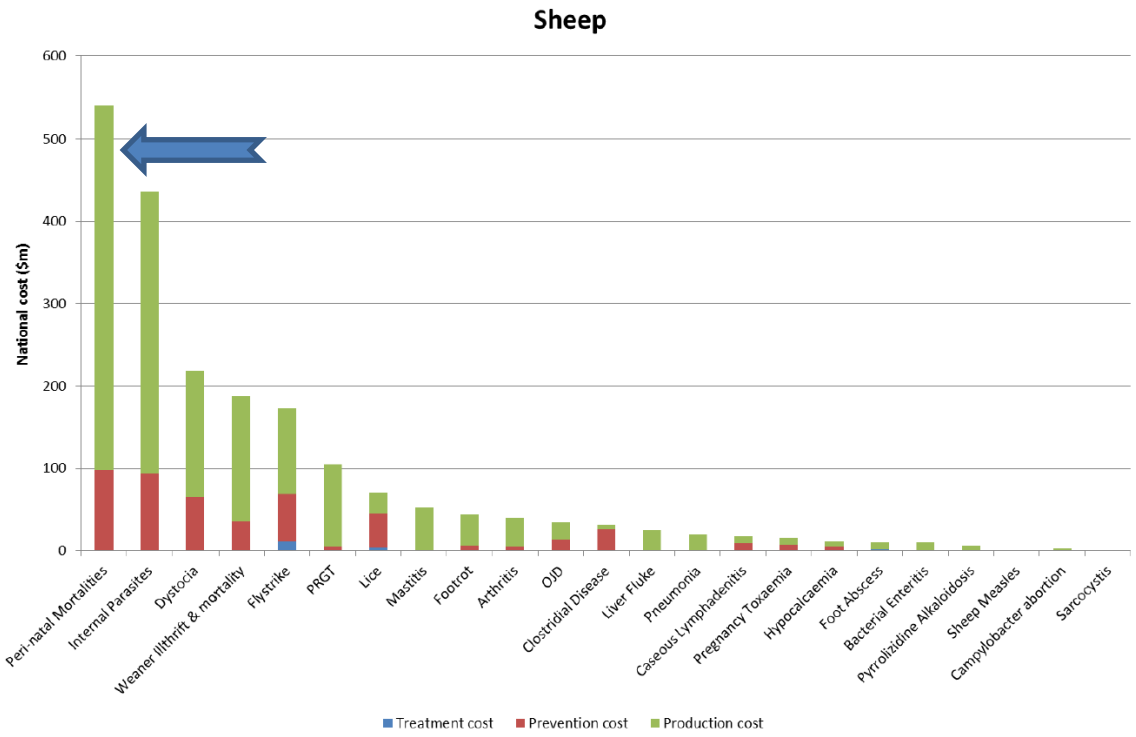
This survey was comparatively small and included two states and 31 producers – 17 representing the pastoral regions of western NSW, south western QLD, and central western QLD and 14 representing the high rainfall regions of eastern NSW, south eastern QLD and north QLD. The survey covered 567,177ha of land and approximately 160,010 goats i.e. 3.6% of the Australian goat population of 4.5 million goats (FAO 2013);- comprising 4.1 million rangeland goats and 400,000 domestic farmed goats (ABS, 2012) as reported in that report. The survey was done by face to face interviews over two hours and an extensive range of questions were addressed.

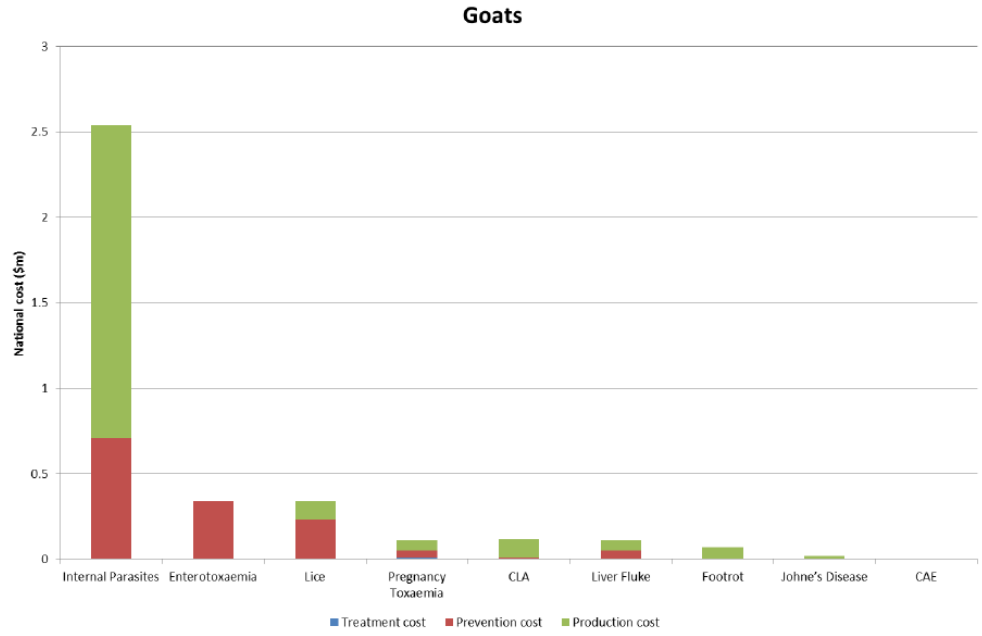
Mortality rates for kids (0 to 3 months) were reported to be greater for the pastoral region at 33% per year than the high rainfall region at 12% per year. The mortality rate of the kids for western NSW and south west QLD were unknown to producers interviewed. The producers in the pastoral and high rainfall regions reported that the most common causes of mortality in their goat herds were starvation, mismothering syndrome and predators. The authors then state "It is likely that the mortality rate of kids could be greater than this as the western NSW and south western QLD as producers did not know the mortality rate of their kids. Furthermore, western NSW producers rely heavily of opportunistic harvesting of goats and as such the herds would be unmanaged. Predation of kids by wild dogs, foxes, wild pigs and wedge tailed eagles were reported as a significant source of losses for young goats from all producers. The numbers of kids that were predated upon in a year was unknown.

However when producers were asked to identify factors to increase their profitability, the following strategies were supported: 48% (15/31) reported focusing on target markets, in particular meeting market specifications, and identifying new markets. Improving pasture management was reported by 45% (14/31) of interviewees, 35% (11/31) introducing better quality bucks and the minority were associated with herd management issues such as reducing the mortality rate, increasing weight at turn-off and increasing marking percentage

2015: GHD Pty Ltd – Jubb, Shepherd, Webb-ware and Fordyce "Priority list of endemic diseases for the red meat industry"

This report attempts to establish the cost nationally of neonatal losses in the red meat industry.





The lack of any mention of kid loss as being a major issue in goat industry compared to lamb loss in the sheep industry would appear to be a reflection of a lack of data, the methodology and the questionnaire (kids not mentioned) rather than fact.

It is inexplicable that neonatal loss in one species of small ruminant producing multiple births in the pastoral zone should have the highest national cost of all the issues canvassed while another small ruminant species does not even mention it.