

LiveCorp Submission

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Live sheep exports to or through the Middle East – Northern Hemisphere Summer Comments on Draft Regulatory Impact Statement

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1 Introduction

This submission by LiveCorp is written in response to the invitation to comment on the draft regulation impact statement (RIS) which has been prepared by the Department of Agriculture (“the Department”) on options to limit the risk of heat stress in live sheep exported to, or through, the Middle East in the northern hemisphere summer.

This is now the fourth major submission written on this subject by LiveCorp in the space of little more than twelve months. All the material and comments made in the previous three submissions continue to be regarded as relevant and important to the subject matter addressed in the draft RIS. This submission should be read in conjunction with the other three submissions that have been prepared by LiveCorp. Some of the points made in the previous submissions will inevitably be repeated in this submission for which we apologise.

As pointed out in our previous submissions, LiveCorp fully recognises the difficulty of the task confronting the Department in preparing the draft RIS. This difficulty is intrinsic to the move away from a risk assessment simply involving mortalities to one involving broader animal welfare considerations and stems primarily from two sources:

- First, there is the question of what is animal welfare and how should it be measured. It is obvious from the general literature on animal welfare, as well as from the reviews since April 2018 (the McCarthy Review), that these are questions without clear answers. There is disagreement on:
 - what to measure - as evidenced, for example, by no clearly defined, measurable animal welfare objective related to heat stress on sheep voyages to the Middle East during the northern summer;
 - how to measure it - as evidenced, for example, by the disagreement in panting score ordinal scales, and
 - how to aggregate it - as evidenced, for example, by the different aggregation criteria advocated by the RM Hare and J Rawls schools of thought¹ and the lack of clarity in all the Middle East work so far on this aspect of the measurement problem.
- Second, apart from lack of clarity on how to measure animal welfare, differences exist on how to value it. As Emeritus Professor, John McNerney, points out in an article quoted in the draft RIS (but in a different context), because animal welfare is an attribute conferred **solely** by humans, values attached to it will vary across individuals (and the evidence is that this variation is considerable)². Because of this McNerney cautions against regulatory overreach, advocating that many aspects of animal welfare are best left to market mechanisms.

These two dilemmas, which have affected the heat stress reviews since April 2018, are also evident in the draft RIS. For example:

- The regulatory objective related to animal welfare does not contain a precisely defined quantitative target.
- Further, the draft RIS assigns no values to the benefits that will flow from regulatory interventions aimed at reducing the risk of heat stress in live sheep exported to, or through, the Middle East. While the avoidance in the draft RIS of assigning a value to animal welfare

¹ See, for instance, Hare, R.M., 1981, *Moral Thinking – Its Level, Method, and Point*, Clarendon Press: Oxford, UK; Rawls, J., 1971, *A Theory of Justice*, Revised Edition 1999, Harvard University Press: Cambridge, USA and Rawls, J., 1993, *Political Liberalism*, Columbia University Press: New York, USA.

² McNerney, J., 2016, In what sense does animal welfare have an economic value? *Veterinary Ireland Journal*, Vol. 6, No. 4, pp 218–220.

improvements is understandable, the draft RIS could be improved through increased quantification of the benefits (including animal welfare benefits) associated with the options under consideration. It is often the case when Government investment and regulatory decisions are being made that quantified benefits are attributed to outcomes not normally subject to market transactions (e.g. human life, travel time savings that will lead to increased leisure) – animal welfare falls into this category.

In the remainder of this submission, LiveCorp provides comment on a number of areas where, in our view, the draft RIS could be improved and strengthened and the further work needed to achieve greater certainty on appropriate regulatory options.

2 Framing of the RIS

A critical aspect in framing any RIS is to state the regulatory objective with clarity and precision. Also critical is defining the base case – the status quo. In this section of the submission we examine these aspects of the draft RIS.

2.1 Regulatory objective

Australian Government regulatory guidelines require a RIS to contain statements “clearly identify[ing] what objectives, outcomes, goals or targets you are aiming for”. Moreover the Australian Government guidelines, amongst other things, require objectives to be “specific”, “measurable” and “accountable”. LiveCorp questions whether the draft RIS meets these requirements.

The primary objectives of government action are provided in Section 3.1 of the draft RIS:

“The primary objectives of government action are to:

- *reduce the risk of heat stress in sheep exported to, or through the Middle East during the Northern Hemisphere summer to a very low level (less than 5% risk)*
- *maintain a viable live sheep export trade supported by improved animal welfare outcomes, that as a minimum meets the requirements of the ASEL and relevant legislation*
- *uphold Australia's reputation as an exporter of high quality livestock.”*

LiveCorp questions whether the first of these objectives, namely to “*reduce the risk of heat stress in sheep exported to, or through the Middle East during the Northern Hemisphere summer to a very low level (less than 5% risk)*”, which is the main driver for the regulatory intervention, is “measurable”, “specific” and promotes accountability. How is heat stress in sheep to be defined? What are the aspects of animal behaviour by which it will be measured? How will regulatory success be assessed?

An appendix to the draft RIS contains a suggestion that heat stress can be measured through open mouth panting – i.e. by implication the regulatory objective becomes to avoid open mouth panting. But, as pointed out in the previous LiveCorp submissions, in expert reports and even in the draft RIS, duration is likely to be a critical factor. In Australia on a hot day sheep open mouth pant. In recognition of this a more considered objective would be to avoid open mouth panting for a prolonged period – but how long is prolonged and how many sheep should be involved before it is considered unacceptable (since, as also pointed out in previous submissions, some sheep can open mouth pant when body temperatures are normal)? Other researchers would argue that animal welfare (even when related to a specific issue such as heat stress) is multidimensional and cannot be measured along a single vector.

The draft RIS goes on to conclude that heat stress in sheep occurs when ambient wet bulb temperatures (WBTs) exceed 29°C.

Using a risk-based analysis of the best available science and evidence, the department came to the view that voyages to, or through, the Middle East should be avoided if the risk of heat stress (ambient WBTs exceeding 29°C WBT) was 5% or more. This provided the basis for the prohibition parameters.

This might suggest that the regulatory objective (at least for Option 2) could be set as: *prohibit voyages when there is a 5% or greater probability of WBTs exceeding 29°C.*

It is important, however, that this not be set as the regulatory objective. Avoiding WBTs of more than 29°C merely represents the means to achieve the regulatory objective – it is not an objective in itself.

Best practice involves establishing as the regulatory objective the end point to be achieved, not the means of achieving it. The OECD, for instance, is explicit about this point³:

“A common mistake when starting your analysis is to confuse the ‘means’ and ‘ends’. The policy objective is the ‘end’ outcome that the government wants to achieve. This should not be confused with the ‘means’ of achieving it”.

The OECD provide an example using road regulations:

“A policy objective is to reduce the number of deaths due to road accidents. Reducing speeding is just one means of achieving the objective – but is not the objective itself”.

It is to be noted that past reviews on heat stress, including by the Technical Review Panel, have confused the end policy objective with the means of achieving it.

As stated in the Australian Government regulatory guidelines, it is critical that the regulatory objective be precisely and quantitatively defined. In the case of Middle East sheep shipments the regulatory objective is presumably to reduce the risk of substantial animal suffering due to heat. The community cares about and values avoiding animal suffering – it does not value a reduction in ambient temperatures experienced on a voyage. The way to quantify this animal suffering needs to be clearly and directly defined as does the expected impact of the regulation on its reduction.

If this cannot be done (and this is the view of LiveCorp given the current state of scientific knowledge) regulatory caution must be exercised - amongst other things if the regulatory objective cannot be precisely and quantitatively specified no definitive method exists to assess the success of the regulation. A possible way of exercising regulatory caution would be to accept the current industry moratorium (see below), monitor results and impose additional regulations if required. It is to be noted that the Department has the ability to introduce new regulations quickly if needed (as revealed by many new regulatory requirements over the past two years).

2.2 Defining the status quo

The draft RIS notes it is a requirement of the Australian Government that the regulatory status quo be one of the options considered in any RIS. The status quo has been defined in the draft RIS as the regulatory environment that was in operation prior to 2019.

LiveCorp understands why the Department chose not to include the 2019 shipping prohibition period in the specification of the regulatory status quo. However, the Department has also chosen not to include the industry moratorium in this specification. The industry moratorium refers to a voluntary decision, *developed and initiated by all relevant exporters trading sheep to the Middle East*, to cease sheep shipments to and through the Middle East for the months of June, July and August. The industry moratorium, announced on 4 December, 2018, was to take effect from 1 June 2019 and remain in place *“while the industry develops new technology which could, in the future, address the heat risk challenges”*. Later this moratorium was slightly modified with agreement to a voluntary cessation of shipments to Red Sea destinations between 1 June and 30 August and to the

³ See, for example, Organisation for Economic Co-operation and Development, 2008, Introductory Handbook for Undertaking Regulatory Impact Analysis (RIA), <https://www.oecd.org/gov/regulatory-policy/44789472.pdf>.

Gulf between 1 June to 14 September. It is questioned whether the industry moratorium should have been considered more in relation to the status quo.

In the draft RIS the industry moratorium is dismissed on three grounds (p20):

- not all exporters are members of ALEC,
- the department has no regulatory basis to enforce compliance with a voluntary industry moratorium, and
- the industry-led moratorium is not quite long enough to effectively manage the risk of heat stress.

On the first of these all major exporters are members of ALEC – in fact ALEC members account for more than 96 per cent of Australia’s annual livestock exports, by volume and value. It is understood by LiveCorp that all sheep shipments to the Middle East by sea over the past two years (1 January 2017 to 31 December 2018), by operating exporters with a current license, have been by ALEC members⁴. The unanimity of decision making on this issue by ALEC members and the fact that these members account for all of the sea trade to the Middle East cautions against dismissing the moratorium on the basis that not all exporters are members of ALEC or the department has no regulatory basis to enforce compliance (which, while true, may not be relevant). If shipments did begin to occur (or applications were made for such shipments) in conflict with the industry moratorium it should be possible for ALEC and the regulator to easily prevent these under existing regulatory powers.

The third grounds of dismissal can also be questioned. As pointed out in section 2.1 of this submission and in the introduction, significant uncertainty surrounds the issue of heat stress in sheep. If the industry moratorium is considered as part of the status quo, to make a strong case for regulatory intervention, the Department would need to demonstrate that substantial net benefits will arise from Option 2 compared to the industry moratorium. This may be difficult to achieve when there is so much disagreement about how welfare should be quantified and valued.

⁴ Information from the Department’s mortality reports to Parliament, which list all livestock shipments and exporters involved, plus additional information from ALEC, forms the basis for statements made. The period 1 January 2017 to 31 December 2018 was used as since mortality report information has yet to be posted for 2019 – see <https://www.agriculture.gov.au/export/controlled-goods/live-animals/live-animal-export-statistics/reports-to-parliament>.

3 Draft RIS lacks valuations

Another potential area where the draft RIS could be strengthened is with additional quantification. To allow the relative merits of options to be readily compared a substantial level of quantification is useful. Ideally costs and benefits of all options should be measured using a common metric – typically \$\$. The current draft RIS contains relatively little quantifiable supporting evidence.

Below are comments on the quantification of benefits and costs contained in the draft RIS.

3.1 Quantification of costs

Major costs associated with the options under consideration will fall under the following categories.

- Lower producer prices / profitability (primarily in Western Australia, but also to a lesser extent in eastern Australia under some scenarios);
- Reduced turnover / profitability for road transport operators;
- Reduced turnover / profitability for shearing services;
- Reduced turnover / profitability for registered premise operators;
- Reduced turnover / profitability for stock feed manufacturers;
- Business disruption and reduced turnover / profitability for livestock exports;
- Reduced turnover / profitability for livestock shipping operators;
- Reduced turnover / profitability of other ancillary businesses servicing the live trade;
- Welfare costs associated with alternate uses for the livestock;
- Damage to Australia's reputation as a reliable supplier of agricultural products;
- Hardship for supply chain businesses in overseas countries that deal in Australian livestock or the products derived from these livestock;
- Loss of utility / choice for overseas consumers; and
- Impact on Australian rural towns and communities of lost producer income and lower employment in businesses serving the live trade.

Although the draft RIS contains commentary on costs under almost all of these categories, estimates of cost levels are mostly not provided.

Some of the commentary leaves the reader uncertain of the Department's assessment of the level of costs associated with the various options. For instance, Chapter 5 of the draft RIS contains a review of studies that have examined the impact of a complete cessation of the live export trade. This section simply notes that studies commissioned by animal welfare groups have assessed the impact at minimal levels whereas those commissioned by industry groups have estimated the impact to be significant. The independent view of the Department is not provided. For the purposes of the RIS such an assessment would seem vital.

Of all the cost categories listed above the most significant costs are likely to be those associated with the drop in producer prices. Unlike for many of the cost categories, estimates *are* provided in the draft RIS on the expected impact of the prohibition on producer prices. In particular, in Chapter 3 of the draft RIS a conclusion is reached that *"Option 2's prohibition is expected to result in a maximum price decline of 20% [in Western Australia] compared to option 1"*. This conclusion is reached on the basis of transport costs of around \$20 per head from Western Australia to the eastern states which would constrain the fall in Western Australian livestock prices.

LiveCorp questions this estimate as the basis for estimating costs flowing from the reduction in producer prices. Reasons for this questioning are as follows

- Quotations supplied to LiveCorp for “all in” transport costs from Western Australian to western Victoria (where there are a number of sheepmeat export plants) are in the range \$24 / head to \$29.50 depending on livestock specifications and the nature of the journey. These prices are highly variable and subject to a range of factors (e.g. fuel, future price, equipment, etc).
- The flow of livestock from Western Australia will, to an extent, depress eastern states prices – this needs to be taken into account.
- The type of stock going into live export are suited for that trade, but less suited for processing. If destined for processing they will, therefore, attract price discounting.
- There will be discounting and risks associated with the transport journey.

In addition to the above costs there will also be welfare costs associated with transporting sheep from Western Australia to the eastern states. Unlike for sea transport it is almost impossible to obtain reliable information on welfare outcomes, including mortalities, for livestock transported across land. However, the following information is presented:

- the mortality rate for road transporting bobby calves to an abattoir in northern Victoria was calculated at 0.6% using data from 1998 to 2000⁵;
- a survey of mortalities among cattle transported by rail in Queensland in the late 1970s revealed a rate of 0.4%⁶;
- the mortality rate for sheep transported by road in Queensland in 1988 was found to be 0.7% to 1.6%⁷;
- in southern Australia, when travelling relatively short distances by road to deliver sheep to a depot, Makin et al determined a mortality rate of 0.1%. However, the authors noted that, within this average, the risk of mortality for sheep that had travelled 800 km or more was 3.4 times greater than for sheep that had travelled less than 200 km.⁸

Even when these welfare costs are not taken into account, the costs from the Department’s favoured RIS option (option 2), involving a trade prohibition from 1 June to 14 September to all Middle East destinations, with prohibition extensions for Oman and Qatar, are substantial. Looking nationally, Mecardo has concluded that the reduction in the live export trade that occurred in June to October 2018 cost the industry \$83.6 million in lost revenue which equates to a farm gate loss in revenue of \$37.6 million – it seems likely that option 2 would result in similar impacts to those evident in 2018 (especially when the additional provisions in option 2 are taken into account) – note the Mecardo report is included as Appendix A⁹.

Although this loss of revenue is small compared to the size of the Australian economy, it impacts heavily on the profitability of sheep producers. On average over the last 5 years across Australia

⁵ Cave J.G., Callinan A.P.L., Woonton W.K., 2005, “Mortalities in bobby calves associated with long distance transport”, *Australian Veterinary Journal*, Vol 83, pp:82–84.

⁶ Tobin J., 1981, *Railed-cattle losses in Queensland*, Report produced by the Queensland Meat Industry Organization and Marketing Authority.

⁷ Shorthose W.R., Wythes J.R., 1988, “Transport of sheep and cattle”, *34th International Congress of Meat Science and Technology* as cited in Knowles T.G., 1998, “A review of the road transport of slaughter sheep”, *The Veterinary Record*, Vol. 143 No 8, pp:212-9

⁸ Makin K.J., Perkins N., Curran G., House J.K., Road Transportation of Sheep – Mortality during Transport and Rejection on Arrival, <https://www.google.com.au/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwjCyK2AmfnhAhWWfCsKHcSvAkQQFiAAegQIBBAC&url=http%3A%2F%2Fwww.sciquest.org.nz%2FelibRARY%2Fdownload%2F67829%2FT2-4.3.4%2B-%2BRoad%2Btransportation%2Bof%2Bsheep%253A%2Bmortality%2Bduring%2Btransport%2Band%2Brejection%2Bon%2Barrival&usq=AOvVaw3DYdYIR3Og5CVJ1p9qomAM>.

⁹ Mecardo, 2020, *Impact of the Live Sheep Export Trade’s Self-Imposed Moratorium and Regulatory Changes*, Report commissioned by LiveCorp and Meat & Livestock Australia, January.

specialist sheep farms achieved average profits of \$21,876 per farm and in Western Australia \$32,322¹⁰. Any significant loss of revenue will see a substantial portion of farms become unprofitable – and average profits turn into average losses.

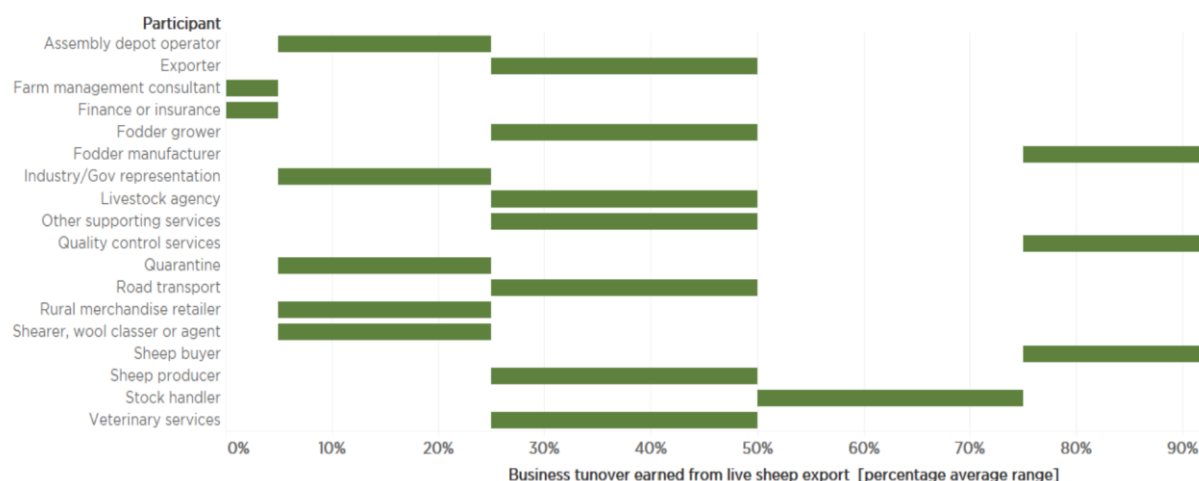
It is not only producers, however, that bear the cost of a regulatory prohibition – for instance:

- Western Australian road transport operators are often highly dependent on the livestock export trade. For livestock transporters the dependency generally ranges from 25% to 50%, but some operators are 85% dependent. Many of these businesses will no longer be able to operate under extended, longer term regulatory prohibitions.
- If option 2 is implemented shearing service providers in key live export regions will not be able to supply work to their usual contracted shearing teams during part of May, June, July and August – this occurred in 2019. A number of providers reported that because of the 2019 prohibition they were forced to reduce their operation down to 1 team, working 3-4 days per week. Retention of staff, an already challenging feat for managers, will be made more difficult due to this gap in available work. Over the winter the live export trade has traditionally provided employment for shearing contactors in a period of otherwise little available work.
- The livestock export trade is a significant end customer of feed products. Two mills in Western Australia supply the totality of the live export sheep trade's needs. It is believed that these mills are extremely heavily reliant on the live trade for continued operation.

Ideally, all these costs should be quantified and taken into account in the RIS. Chart 3.1 shows the dependency of various businesses on the Western Australia live sheep export trade.

Chart 3.1: Western Australia value chain participant's reliance on live sheep exports as a % of business turnover

Western Australia value chain participants' reliance on live sheep exports indicated as a percentage of business turnover.



Source: Mecardo, 2019, Value analysis of the Australian live sheep export trade, Report commissioned by LiveCorp and Meat & Livestock Australia, September.

¹⁰ ABARES farm survey data, values expressed in 2017/18 \$s.

3.2 Quantification of benefits

Ideally benefits should also be quantified – although it is appreciated this is more difficult.

Four major benefits are evident in the draft RIS analysis

- Benefits to the meat processing industry from having access to greater numbers of more cheaply priced livestock.
- Increased trust in the regulator.
- The community values animal welfare. Options 2 and 3 by providing greater assurance that sheep exported to and through the Middle East will not be affected by heat stress provide community benefits.
- Greater assurance that sheep exported to and through the Middle East will not be affected by heat stress reduces the risks of a complete closure of the live sheep export trade.

These third and fourth benefit streams are highly interrelated and, if quantification is to occur, care would be needed to avoid double counting.

Like the cost impact of a total trade closure, again the reader is left uncertain over the Department's assessment of the level of community benefits associated with the various options. On the one hand the Department quotes stated preference / simple attitudinal surveys that indicate that animal welfare is highly valued (for example, the reference to the Futureye surveys that 95% of people view farm animal welfare to be a matter of concern, with over 80% finding live animal exports moderately to extremely concerning). On the other hand, revealed preference studies are quoted in the RIS identifying that consumers are willing to "pay more, **but not much more**, for higher levels of animal welfare". LiveCorp notes that revealed preference studies are generally regarded to be the more accurate measure of valuations, particularly when stated preference surveys do not involve trade-offs.

In terms of benefits flowing from a reduced risk of total trade closure the discussion under 3.1 is relevant.

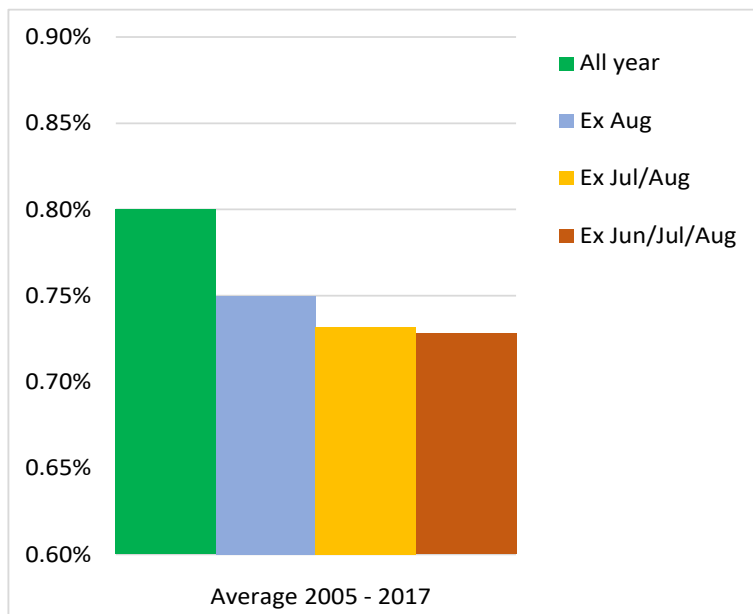
3.3 Benefit assessment of the period of prohibition

When considering benefits arising from improved animal welfare outcomes, data with a degree of relevancy is to be found in the mortality statistics that have been collected by the Department for more than a decade. LiveCorp is not suggesting that mortality data be considered in isolation of other data, but it is one of the few indicators of welfare that has been collected over time and is readily accessible – it provides one guide.

This data (from 2007 to 2015) has been recently analysed by Mecardo (see Appendix A)¹¹, with results summarised in Chart 3.2. It is to be noted from Chart 3.2 that the vast majority of benefits, as measured by reduced mortalities, accrue from a trade closure in August alone. Chart 3.2 shows that excluding August results in the major reduction in mortalities, followed by exclusion of July and August. After this, gains (in terms of reduced mortalities) from excluding further months are very marginal.

¹¹ Mecardo, 2020, op cit.

Chart 3.2: Live sheep average mortality with a prohibition across various northern summer months



Using the 2005 to 2017 data, in terms of sheep survival, the difference between a one-month (August) moratorium / regulatory prohibition) and a three-month (June/July/August) moratorium / regulatory prohibition is estimated at 10 sheep per shipment of 50,000. With the recent improvements in mortalities the difference is likely to be even less than this (and considerably so).

The question is: how should any reduction in mortalities (and any improvements in animal welfare outcomes more generally, however specified) be assessed against the viability of rural businesses and the flow on effect this has to rural communities? This is the challenge facing the RIS and its answer depends on precise quantification.

4 Brief comments on the regulatory options and ranking

The previous two chapters have contained broad comments on the framing of the draft RIS and the degree of quantification. In this chapter specific comments are provided on the ranking of the options and aspects of option 2.

4.1 Ranking of the options

As the options are currently formulated, LiveCorp's analysis concludes that option 2 is preferred:

- If the industry moratorium is not included, Option 1 is to be rejected because it does not provide sufficient assurances on animal welfare outcomes and would place the trade at risk.
- Conversely, Option 3 imposes unnecessary costs on producers, the industry and businesses which supply the industry. It would also severely damage Australia's reputation as a reliable supplier of agricultural products. Very high animal welfare outcomes can be achieved under Option 2 – there is no need for the additional impositions that are reflected in Option 3. Additionally, Option 3 is not practical to implement as the HSRA model has yet to be revised to reflect broader welfare criteria.

4.2 Specific features of option 2

Option 2 involves the following trade prohibitions for Middle East destinations:

- Red Sea destinations - 1 June to 14 September
- Kuwait - 1 June to 14 September
- UAE - 1 June to 14 September
- Oman 1 May – 14 September
- Qatar 15 May – 22 September.

Additionally;

- Single port discharge is required for voyages arriving in Gulf ports during June or departing Australia in September;
- A fleece length of 15 mm or less is stipulated for exports “during the Northern Hemisphere summer”;
- The body condition score must not be higher than 3.5; and
- A number of aspects of voyage monitoring and reporting are mandated.

LiveCorp questions whether the first three of these additional requirements has been sufficiently justified – certainly there is a lack of quantifiable evidence provided in the draft RIS. It would be recommended that each of these additional requirements should be subject to cost and benefit analysis in their own right, or at least indicative quantification of costs and benefits, to ensure they can be justified.

Multiple port discharges are a feature of Middle East sheep export operations with shipments of sheep to markets such as Oman and the UAE significantly smaller than to Kuwait. These smaller markets do not support full vessel shipments and must be supplied using multiple port discharge operations. A requirement for single port discharges only could make these smaller markets unviable for voyages leaving Australia in May or arriving in October – effectively extending the prohibition for these markets to almost 6 months. Not only will this additional requirement hurt Australian producers and businesses, it is likely to meet with resentment and anger from customer in markets such as the UAE and Oman. Current regulations (as per EAN 2018-06) stipulate that if Kuwait is one of the destinations, the exporter must discharge sheep in Kuwait first. Calling at

Kuwait first allows the vessel to be substantially destocked and has proved successful in achieving high welfare outcomes (as evidenced by some of the charts contained in the draft RIS). Any departure from current regulations requires thorough justification.

Similarly, the requirement for a fleece length of 15mm or less to apply to individual sheep (as opposed to an average for a mob) has not been quantifiably justified in the draft RIS. LiveCorp also has some doubts about the practicality of this requirement. Shearing occurs in registered premises at a rate of about 2,500 sheep per day – for a shipment where 50,000 sheep need to be sheered, this is equivalent to 20 days work. Certainly, if a fleece length of 15mm was to be stipulated, the time in registered premises would need to be significantly extended with associated substantial increases in feeding and other costs. The practicality is especially to be questioned when this new requirement is combined with other ASEL regulations such as the need for sheep shorn at registered premises to be kept in sheds. Again a thorough, well quantified justification of any change on fleece length regulations is warranted.

Finally, the requirement for a body condition score not exceeding 3.5 (rather than 4 as currently stipulated), receives almost no justification. Virtually the sole statement made to support this requirement is that higher body condition scores “*may* contribute to heat stress and poor welfare”. Again, a thorough, well quantified justification is warranted, including an assessment of benefits and costs.

5 Process to arrive at a new HSRA solution

Except in unusual circumstances, blanket prohibitions generally are not regarded as best practice regulation. In prescribing a prohibition, inevitably the complexity of individual differences is cast aside (e.g. differences in vessel or livestock characteristics). Moreover, prohibitions stifle innovation. It is much better if regulation specifies the outcomes required, allowing private enterprise the flexibility to find ways of meeting these outcomes. This is a solution that can provide beneficial outcomes for both regulators and industries.

LiveCorp notes the acknowledgement by the Department in the draft RIS that “*ongoing research into heat stress management and ... new science and technology could provide valid alternatives to the proposed options in the RIS*”. The two further reviews (albeit one informal) are also welcomed¹².

Regulation, however, once introduced is rarely abandoned. Because of this and the bluntness of blanket prohibitions, it is important that a new HSRA model for sheep, developed around broader welfare principles than mortality, is implemented as quickly as possible. In its previous submission LiveCorp broadly outlined the process to arrive at this solution. The starting point is to precisely define a measurable welfare objective (see Section 2.1 of this submission). LiveCorp repeats its offer to set up a working process with the department to define the welfare objective.

¹² The debate on heat stress on voyages to the Middle East has been considerably informed by voyage monitoring over the past 12 months. Because of this there is merit in a further full, formal review after another 12 months, rather than an informal review.

Appendix A: Report by Mecardo on Impact of the Live Sheep Export Trade's Self-Imposed Moratorium and Regulatory Changes



**IMPACT OF THE LIVE SHEEP EXPORT
TRADE'S SELF-IMPOSED MORATORIUM
AND REGULATORY CHANGES**

January 2020

WWW.MECARDO.COM.AU







This report was commissioned by LiveCorp and Meat & Livestock Australia

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Data sources: ABS, ABARES, MLA, DAWR, LiveCorp, Mecardo

Images: supplied by Chantel Renae Photography, The Sheep Collective, Mecardo, Andy Jacob, Corey Weguelin & Darren Spencer

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Businesses are feeling the pressure of recent changes and the risk exists that some will be casualties.

EXECUTIVE SUMMARY

The export of live sheep from Australia is a mature industry and has contributed considerable value to the Australian economy.

It is a key element on which the Western Australian sheep industry is based, providing an orderly method to sell surplus wethers from a flock dominated by Merinos. In good seasons it is important, and in difficult seasons it is vital. It is a necessary process in controlling livestock numbers, using pasture in a sustainable manner, managing farm businesses efficiently and providing additional resilience to the farming enterprise.

It is not however, a single enterprise system.

The industry is made up of a range of large and small contributors, all impacted by two periods of disruption to the trade during the northern hemisphere summer, and some who will move on from participating as a result. The majority of value from the live sheep export trade flows directly to producers, who will adjust their operations in response to changes.

Greater impact will flow to livestock carriers, shearers and feed suppliers & manufacturers. While they may be considered 'just' service providers, they provide key inputs and the industry is important to their financial outcomes. Many of these businesses are feeling the pressure of recent changes and the risk exists that some will be casualties - which will place added pressure on the whole industry in the future.

The impact of the industry's 'self-regulation' and changes imposed by the regulator is impressive, with quantifiable reductions in mortality over the past 18 months. Community expectation is that continuous improvement is maintained; the procedures in place give confidence that this will be the case.

While many industries undoubtedly evolve in response to changed conditions, the isolation of the WA sheep industry and its reliance on live export makes it unique. Without a sustainable live export industry the WA sheep flock is under threat.

PROJECT SCOPE

Mecardo has been engaged by LiveCorp and Meat & Livestock Australia (MLA) to undertake an analysis of the Australian live sheep export trade. The objective of this project is to determine the value of the industry to regional zones across the country. This is the second of a three-stage project which will deliver the following:

1. Identify and outline the economic benefit that flows from the live sheep export trade to participants in the Australian supply chain.
2. An economic analysis of the impact from the industry's self-imposed three-month moratorium and the regulatory changes introduced in 2018.
3. An analysis of a range of farm level decision-making options (domestic fundamentals) influencing national sheep flock numbers, with a primary focus on Western Australia.

This report delivers:

- Analysis of sheep delivery success rates and the impact that regulatory changes have had on sheep mortality and welfare.
- An assessment of the impact to the live sheep export industry of the suspension to the trade in 2018 and the moratorium during 2019, in terms of foregone revenue.
- The impact of the key regulatory changes and the moratorium across the live sheep export supply chain within WA.

METHODOLOGY

To prepare this report, Mecardo consulted with a wide variety of participants in the live sheep export value chain in Western Australia, with a combination of face to face and phone conversations.

The aim was to gain insights into how the suspension of live sheep exports in place during the northern hemisphere summer in 2018 and the moratorium in 2019 have impacted businesses in the value chain. The interviews also sought to determine the associated opportunity costs for participants and how the changes flowed down the value chain and into regional communities. The information gained was consolidated into participant groups and individual participants were selected as case studies.

Further to the consultative process, Mecardo undertook modelling based on the historic relationship between the volume of live export consignments of sheep and the national flock, WA flock, national sheep and lamb slaughter levels, and WA sheep and lamb slaughter levels. This allowed us to calculate what the monthly flows may have been if the shipping suspension in 2018 and the moratorium in 2019 had not been imposed. The gap between modelled and actual live sheep export flows enabled a calculation of the total cost to the industry in lost revenue due to the reduction of the trade during these periods.



OVERVIEW OF DEVELOPMENTS IN THE LIVE SHEEP EXPORT INDUSTRY

The operation of the live sheep export trade was temporarily halted in late June 2018 following the airing of distressing footage on television, and the licence of a key livestock exporter was cancelled.

Following an urgent review of the trade, the Federal Department of Agriculture implemented regulatory changes¹ which required exporters to have a heat stress management plan for each voyage to/through the Middle East and introduced the following conditions to improve welfare outcomes:

- a reduction in the reportable mortality threshold from 2% to 1%
- allometric stocking densities requiring 11–39% more space per sheep depending on the weight/type of sheep
- independent verification of air turnover within pens
- 10% extra space for horned rams
- all vessels to be fitted with automated watering systems
- additional bedding
- a requirement for independent observers to travel on board livestock export vessels

No sheep were exported from Australia to the Middle East until approvals were made by the department in September 2018.

The following year, a moratorium on live sheep exports to the Middle East was self-imposed by Australian livestock exporters as part of a number of wider ranging industry reforms, including the Australian Livestock Exporters' Council (ALEC) Code of Conduct.² The moratorium, in effect from 1 June until 30 August, aims to remove the heat risk challenges associated with shipments in the northern hemisphere summer period until the industry develops new technology and solutions that ensure high standards of welfare.

The 2019 moratorium was enforced through regulation, and in August 2019 the department announced an extension by a further three weeks to 22 September³ due to ongoing concerns about the likelihood of heat stress events during the northern hemisphere summer shoulder period.

Further to the industry and government-imposed regulatory changes and shipping practices, individual participants in the supply chain have established new measures and guiding principles to improve sheep welfare. As an example, in the past sheep were fully shorn prior to export, whereas now exporters prefer to leave the “socks” to protect against shearing cuts below the knee.

¹ Department of Agriculture and Water Resources (2018), Export advisory notice- Legislation amendments for the export of sheep by sea, Available at <https://www.agriculture.gov.au/export/controlled-goods/live-animals/advisory-notices/2018/2018-06>

² Australian Livestock Exporters' Council (2019) Sheep moratorium part of industry re-set. Available at: <https://auslivestockexport.com/news/10-news/122-sheep-moratorium-part-of-industry-re-set>

³ Department of Agriculture (2019), Export advisory notice- Export of sheep by sea to the Middle East during September and October 2019. Available at: <https://www.agriculture.gov.au/export/controlled-goods/live-animals/advisory-notices/2019/2019-08>

ECONOMIC IMPACT TO THE LIVE SHEEP EXPORT INDUSTRY OF THE SHIPPING SUSPENSION IN 2018 AND THE MORATORIUM DURING 2019

Multifactorial regression modelling of annual live sheep export volumes and the relationship between the live export trade, flock size and slaughter, both nationally and within Western Australia, was used to estimate monthly live export sheep volumes if the industry was not subject to the 2018 suspension and the 2019 moratorium.

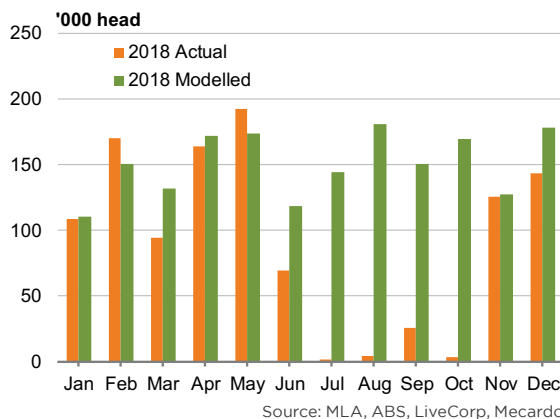
Figure 1 highlights the actual monthly live sheep consignments compared to the modelled estimates, assuming an open trading environment for the 2018 season. During the June to October period, average monthly trade volumes were 86.3% lower than the modelled outcomes with actual average flows of 20,896 head per month compared to modelled flows of 153,191 head per month.

The reduction in the trade during the June to October period in 2018 is estimated to have cost the industry \$83.6 million in lost revenue nationally. Value chain analysis of the live sheep export trade shows that approximately 45% of the revenue earned via the trade is returned to sheep farmers, which would equate to \$37.6 million of lost sales revenue to the farm gate from the live sheep export trade.

During this time farmers may have turned off stock for domestic slaughter but this would have been at prices below what they could have achieved via the live export avenue, particularly in WA.

A 2018 CIE report⁴ investigating the benefit the live sheep export trade brings to saleyard prices determined that an absence of the live sheep trade results in a 30-50% approximate reduction in prices at the saleyard in WA.

Figure 1. Live sheep exports 2018 (actual versus modelled)



⁴ The Centre for International Economics (2018) *Contribution of live exports to Woolgrower's Incomes- an update*. Canberra, Australia. It is important to note that the price declines stated in the CIE report assumed a total closure of the industry, not a three month moratorium. However, saleyard price responses in WA following the unexpected extension of the moratorium period in August 2019 saw falls of 15%-30% across lamb and sheep categories.

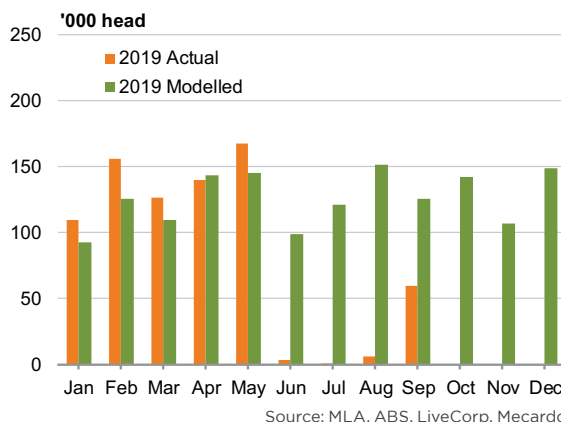


Given the proportion of sheep for live export sourced in WA, this would equate to loss of revenue to the farm gate in WA of between \$9.3 and \$15.4 million during the 2018 season ⁵.

Analysis of the modelled export flows for the 2019 season compared to the actual flows during the moratorium during June to mid-September shows that actual average monthly flows of 17,293 head are 86.1% lower than modelled flows of 124,453 head (Figure 2).

The moratorium during the 2019 season is estimated to have cost the industry \$65.8 million in foregone revenue nationally. This would equate to a shortfall of \$29.6 million in farm revenue earned via the live sheep export trade. Assuming a 30-50% lower saleyard price for stock turned off to the domestic sector in WA this would mean a loss to farmers between \$7.3 and \$12.1 million for the 2019 season ⁵.

Figure 2. Live sheep exports 2019 (actual versus modelled)



IMPACT OF THE MORATORIUM ON PARTICIPANTS IN THE VALUE CHAIN IN WESTERN AUSTRALIA

Western Australian sheep industry

The sheep industry in Western Australia is primarily self-replacing flocks, largely Merino, with crossbred and prime lamb flocks making up the minority. Sheep production is very complementary to grain production in WA and, as a result, mixed sheep and grain enterprises are common.

⁵ Calculation of lost revenue to WA producers as follows: 2018 - \$83.6 m forgone by industry nationally, 45% forgone by producers equates to \$37.6 m, WA producers reflective of 82% of national trade equates to \$30.8 m forgone by WA farmers, but 50%-70% estimated to be recouped by selling into domestic market equates to a loss of \$9.3 - \$15.4 m. 2019 - \$65.8 m forgone by industry nationally, 45% forgone by producers equates to \$29.6 m, WA producers reflective of 82% of national trade equates to \$24.3 m forgone by WA farmers, but 50%-70% estimated to be recouped by selling into domestic market equates to a loss of \$7.3 - \$12.1 m.

In 2017-18, 43% of sheep enterprise farms in the wheat-sheep zone were mixed enterprise, with the remaining classified as specialist sheep farms.^{6,7}

The wheat-sheep zone has highly seasonal production. Sheep are grazed on pastures which dry out over the summer and autumn period. The remaining stubbles and dry pastures are then grazed over the winter and spring for weed management and supplemented with feed grains when required.

The dry, Mediterranean climate in these regions and the lack of reliable improved pastures for sheep finishing makes them more suited to Merino sheep production than prime lamb production.⁸ The production of shipping wethers fits well with the highly seasonal nature of production and they are favoured for their less intensive management and labour requirement compared to alternate systems.

Strong demand for Australian sheepmeat and rising prices have driven considerable growth in prime lamb production. While the lamb composition of the flock in WA has increased, prime lamb production is not suited to marginal rainfall areas, or for crop dominant mixed enterprises. The Merino industry remains pivotal to the WA sheep flock.

In the wheat-sheep zone, wethers are typically turned off at 7 months to 1.5 years of age, after they are first shorn. However, when wool prices are strong, it may be economical to retain wethers until they are older than 2 years for increased wool production. Strong lamb and mutton prices sway the equation back in favour of turning off young wethers, as this allows sheep farmers to run more ewes to increase meat production.⁹

Value chain participants

Participants in the live sheep export supply chain range in their exposure. While some individuals may have little exposure to the live sheep trade and therefore have seen minimal to no impact of the moratorium on their business, others that have heavily invested in supply or services for the live sheep export market experienced more negative consequences. Consultation with individuals and businesses in different segments of the supply chain in various regions built a picture of average impacts.

For the purposes of this research, key live sheep export supply regions in Western Australia are defined as the Central Eastern Wheatbelt, Wheatbelt South, and Upper Great Southern. This area includes but is not limited to the towns of Hyden, Wickepin, Narrogin, Williams, Wagin and Katanning. Strong transport linkages exist in these regions to move sheep to live export markets.

⁶ Specialist sheep farms: a sheep farmer who earns more than 50% of receipts from the sale of sheep, lambs or wool.

⁷ Data source: ABARES Australian Agricultural and Grazing Industries Survey, Accessed November 2019. Available at: <http://apps.agriculture.gov.au/mla/>

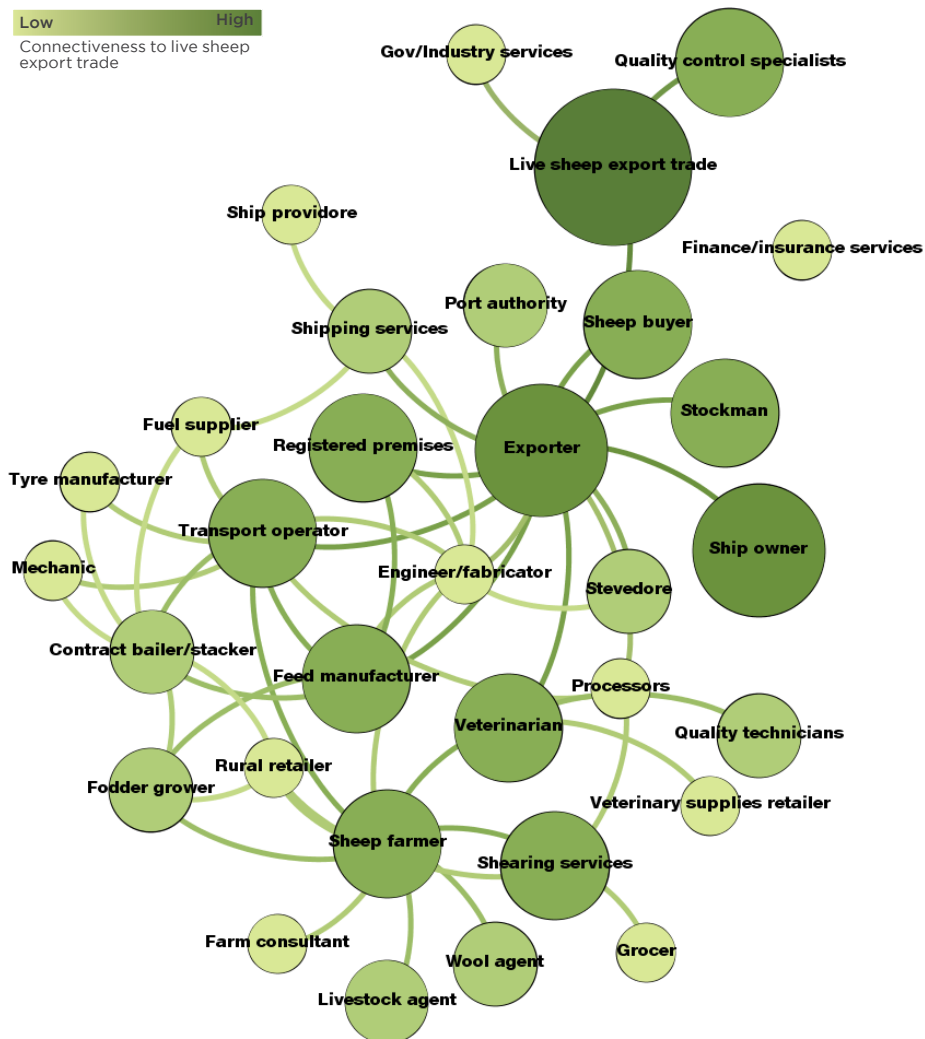
⁸ Keogh M, Henry, M, Day, N (2016) *Enhancing the competitiveness of the Australian livestock export industry*. Research report by the Australian Farm Institute. Surry Hills, Australia. August 2016.

⁹ Hassall & Associates Pty Ltd (2006) *The Structure and dynamics of Australia's sheep population*. NSW, Australia.



The live sheep export network diagram visually demonstrates the interconnectivity of the value chain. It identifies the linkages between participants and the flow of value through the industry. The size and colour of the participant indicates their closeness and reliance on the live sheep trade for business revenue.¹⁰

Figure 3. Live sheep export value chain network diagram



¹⁰ The network diagram has focused on the participants and linkages identified by consultation with industry. Further participants and value flows exist down the live sheep export value chain. Finance/ insurance services connect with all participants

Sheep farmers

The live sheep export trade is a crucial marketing channel for many sheep farmers in Western Australia. The trade has become entrenched in the supply chain structures and systems, and as such, sheep production businesses have designed their operations to supply to this market, based on environmental and economic drivers. Economic impacts of the moratorium to individual sheep farmers vary significantly depending on their region, production system and level of exposure to the trade.

The live export trade is the prime outlet for young and aged Merino wethers once pasture quality declines in spring. It is also an outlet for lambs that cannot be brought up to the specifications required for domestic slaughter within their short selling window.¹¹

Lack of pastures in more marginal regions typically inhibits wethers from gaining enough weight to meet the specifications for sale to domestic processors.¹² However, while most cannot be grown out to a condition suitable for local processing markets, they are well suited to live export markets. While some aged wethers enter the domestic mutton market, the live export trade supports demand for a sheep type that is not preferred for domestic processing.

The live sheep export trade has a crucial role in improving farm resilience. The flexibility to sell into the live export market at any time through the year enables farmers to be more productive. It gives them the confidence to run

optimum stocking densities, hold onto stock for longer during difficult seasons and manage pasture more effectively.

The moratorium on the live sheep trade removes an important risk management tool from the arsenal of sheep farmers. Given the high seasonality in sheep regions of WA, farmers rely on access to this market in poor seasons. With the moratorium announced well in advance in 2019, many sheep farmers planned to turn-off wethers to the live trade in February to April, before the moratorium period and before they had any sound insight to rainfall and pasture availability. In an average season, bringing forward this decision will have minimal economic or operational impact. However, due to the narrowed selling window for live export, sheep farming businesses are left more exposed to production risk.

In an above average season, farmers that have turned-off stock prior to the moratorium may have excess feed and lose out on potential wool production.

In poor seasons of low or late rainfall in autumn or persisting dry, farmers will turn-off more stock to manage their stocking density based on the available feed and water. This ensures that there is enough feed for the new season lambs. Under normal market conditions, the live export trade is the only marketing option to sell surplus wethers that cannot meet processing specifications.

In this scenario, with the moratorium in place from June through August, farmers have a number of options to manage lower feed availability.

¹¹ Kingwell, R. et al (2011) *The economic importance to Western Australia of live animal exports*. DAFWA. Government of Western Australia.

¹² Certain well-bred lines of wethers can gain the weight for sale to domestic processing markets under good conditions.



BINDI MURRAY – SHEEP FARMER

Farming is becoming an increasingly risky business in Australia. According to Bindi Murray, a third generation farmer from Woodaniling in Western Australia, the live sheep export moratorium eliminates her most valuable risk management tool at a particularly vulnerable time in the season. Access to the live export trade has enabled Bindi to build a more resilient system and run a more productive operation. In her region, production is *“too seasonal to rely on domestic processing capacity alone”*.

The live export trade is an assurance that she can access a market to turn-off stock at any point; therefore she is able to take on greater risk. For Bindi, this risk comes in the form of higher flock size, and the benefit is a more productive and profitable operation and in turn more jobs and trade in her local towns. It has also enabled her to trial and implement new innovations in her farming system with confidence.

1. Carry wethers through until the trade resumes by supplementary feeding on a light ration.
2. Sell down breeding stock.
3. Sell wethers to east coast markets as stores.

The opportunity cost associated with each of these alternatives is on average less than the value that would typically be received by selling wethers to the live export trade. Hence, farm gate returns would be lower.

In 2018 and 2019, the next best alternative for many farmers when the live export trade halted was to send their light wethers to the eastern markets. There have been few instances in history when the transport of sheep from WA to eastern markets has been feasible. In 2018 and 2019, the drought in eastern Australia and tight supply saw strong demand, and hence strong prices in eastern markets. This acted as a relief valve for WA farmers that were left needing to sell their wethers without access to the live export trade during the shipping standstills. The concern among sheep farmers is that this option will not always be economically viable.

The live export market provides a stable price floor in the sheep market. Fewer buyers are present in WA sheep markets compared to eastern markets. Thus, competition is heavily reliant on the presence of buying activity for the live export trade to improve competitiveness and prices received for stock. During the shipping suspension in 2018, the normal price discount in WA compared to eastern markets, widened further due to lack of competition.

On resumption of the live sheep export trade, the spread between WA trade lambs and the Eastern States Trade Lamb Indicator returned to within the seasonal 70% range.¹³ This confirms modelling conducted by CIE that suggested removal of live export buying competition in WA would reduce returns at the farm gate.

The ability to turn-off stock quickly and with ease to the live export trade throughout the year also encourages on-farm innovation. A number of the farmers consulted reported that it has allowed them to consider using alternative flystrike management techniques (other than mulesing) with the knowledge that should the season become more susceptible to flystrike they can quickly offload stock not yet impacted by flystrike, without negatively impacting farm revenue.

Should the three-month moratorium continue at set dates into the future, sheep farmers will make adjustments to their operation to account for this regulation. One strategy that many farmers will implement is decreasing their exposure to production risk. By reducing the size of the flock the potential productivity of their business will decline but in return, so will the level of risk.

Road transport operators

Road transport is a highly interlinked part of the live export value chain, connecting a number of different supply chain participants. Livestock transport operators are relied on to move sheep

between farms, saleyards, feedlots, abattoirs, registered premises and ports. Bulk transport operators are also involved in the movement and supply of fodder bales from farm to feed manufacturers and on to port for livestock export vessels. The movement of livestock by road requires specialist skills in its operators and bespoke vehicles, crates and loading equipment. Stock trucks are not designed to carry any bulk loads other than livestock. Specialist transporters are present in each area where livestock and fodder are sourced as well as within close proximity of quarantine feedlots.¹⁴

Road transport operators in Western Australia are more highly dependent on the livestock export trade compared to many other participants in the value chain (averaging 25-50% of business revenue, with an upper range of 85%). According to the Australian Livestock Road Transport Association (ALRTA), sheep destined for live export are carried on average 3.5 times by the time they move from farm to the port at Fremantle. In comparison, sheep sold to the domestic processing market are carried just 1.5 times.

For the majority of livestock transport operators in key regions of WA, the moratorium has had severe consequences for their businesses. With farmers either holding onto stock or selling to domestic markets during the moratorium, transport operators experienced a significant reduction in demand for their services.¹⁵

¹³ Mecardo (2019) What a difference a shipment makes, Available at: <http://www.mecardo.com.au/commodities/sheep/analysis/what-a-difference-a-shipment-makes.aspx>

¹⁴ Hassall & Associates Pty Ltd (2004) *A quantitative and qualitative assessment of the value of the livestock export industry to the national economy*. Meat & Livestock Australia Limited, North Sydney, Australia.

¹⁵ Many of the abattoirs in WA and eastern states own their own transport assets so do not rely on independent transport businesses for delivery of purchased stock.



ANDY JACOB - LIVESTOCK TRANSPORT OPERATOR

The live sheep export moratorium was the final catalyst in Andy's decision to move his family and business out of regional Western Australia and to Victoria. The owner operator of a livestock transport business and previous president of the Rural and Livestock Transport Association (RLTA) relied on live exports for 80-85% of his work and income.

The live export shipping standstill in 2018 left Andy instantly out of work. Occasional long distance stock transport work kept some income flowing in but with fierce competition from an influx of other operators, his workload was severely reduced. The income received during this time was enough to prevent him going broke but not enough to ensure the sustainability of his business. Prior to the moratorium, Andy had invested \$400,000 in upgrading his fleet.

Livestock transport operators had few options to replace the work removed by the moratorium period. Road transport movements outside of the livestock export supply chain that could be serviced during this time include:

1. Short farm to farm or saleyard livestock movements
2. Farm/saleyard to abattoir movements
3. Bulk goods transport (only for operators with bulk transport equipment)

These alternatives are not as lucrative as the movements of sheep for the live export market. Higher trip volumes are needed to achieve a return on the investment in the equipment. Of course, the removal of livestock trade movements during the moratorium left a gap in available work in key regions. The remaining livestock movements had fierce competition from an influx of operators.

Some operators reported that their livestock carts sat idle for the three-month moratorium period in 2019. In these cases, operators still incurred economic costs for their non-income generating assets.

Some larger, multivehicle operators were able to supplement some of the lost income and work by expanding their bulk or liquid transport services.

However, the worst affected among those consulted were single truck livestock transport operators that experienced a collapse in their business model. With up to 85% of their work reduced during the moratorium, many operators experienced severe financial stress.

Furthermore, infrastructure and equipment to transport livestock have been heavily devalued in WA. A number of operators referred to their stock crate as a “dead asset”.

Like many communities in regional Australia, respect and support are key features of the rural transport ‘community’. During the moratorium, some farmers with their own transport equipment chose to outsource the work to local operators in the knowledge that operators were desperate for work. In the past, transport operators respected region-defined territories of nearby competitors, however, reports of intrusion and cases of price-cutting were observed in 2019.

Evidence of rationalisation in livestock transport operators as a direct result of the moratorium and instability of the live sheep trade already exists in WA. Livestock transport operators in key livestock export regions are most at risk and do not believe that they will have a financially sustainable business should the three-month moratorium continue into the future. Further and more widespread rationalisation will undoubtedly occur.

Transport operators rely on a range of local service providers in regional towns. Businesses such as mechanics, fuel suppliers, fabricators or engineers and tyre suppliers are all consequently affected by a reduction in truck movements.





DARREN SPENCER – SHEARING SERVICES MANAGER

While the consequences of the moratorium for shearing businesses are significant, Darren fears the impact that flows through to regional communities and the shearing industry most of all. His shearing operation runs up to seven teams, employing up to 40 workers shearing thousands of sheep, which supports other businesses in town. In a given month he spends approximately \$12,000 on groceries in regional shops to provide meals for the working teams. The moratorium in effect prevents this monthly expenditure. In a similar way, expenditure in regional communities is reduced when his team of 40 workers are without income.

Attracting new workers to the shearing industry has been a major focus for Darren in his role as President of the WA Shearing Industry Association. New programs have been implemented to improve standards in sheds and shearer welfare, and train new and young entrants. The introduction of the moratorium has been a major setback to their progress. Without the ability to offer regular contract work throughout the entire year, potential workers will be led to other more secure industries.

Shearing services

Shearing services are an important part of the supply chain, with a requirement that all sheep must be shorn before export. The roles in a shearing team include shearers, wool classers, wool pressers, rouseabouts and may also include a cook.

In Western Australia, shearing ewes and crutching lambs occurs between September and April to bypass the wet autumn and winter months and avoid the risks and negative implications associated. There is less risk involved in shearing wethers during the May to July period, as they can be moved into sheds under threat of rain. Shearing wethers intended for the live export trade to the Middle East fills in what would otherwise be a gap in the work calendar for service providers.

The impact of the moratorium for shearing service providers is a major distortion to the efficient distribution of their workload. In 2019, a full year's workload was effectively squashed into an 8 month period. Shearing services experienced limited demand from May to July and heightened demand in the already busy shoulder period of September to October as farmers held their wethers to shear with the rest of their ewe flocks once the live export trade resumed.

Without the requirement for shearing services for shipping wethers from May to July, providers will operate at a reduced capacity. Shearing of ewes and wether hoggets is the next best alternative for shearing providers during this period; however, no additional demand will be created as a

result of the moratorium. There is very limited opportunity to replace the work lost during this period.

As a consequence of the moratorium in 2019, shearing service providers in key live export regions could not supply work to their usual contracted shearing teams from May to July. A number of providers reported that they were forced to reduce their operation down to 1 team, working 3-4 days per week.

Retention of staff, an already challenging feat for managers, has been made more difficult due to this gap in available work. As with many other employers in regional WA, the shearing industry is faced with growing employment competition from a resurgent mining industry.

Shearing team managers spoke of the added financial strain from efforts to secure their workforce. In some cases, managers continued to pay contractors through the off-season (without them working), provided them with

accommodation or attempted to find them casual on-farm work in efforts to retain staff.

Concerns were also expressed for the social and mental health issues in regional communities, caused by the imbalance between demanding and strenuous work periods (shearers working long days and weekends in peak season) and periods of no work.

The physically demanding nature of shearing work means that staff are liable to high levels of stress during peak periods. In 2019, the added workload during the peak period increased the physical and mental strain on staff. Team managers observed adverse changes in the behaviour of their staff.

Shearing services do not rely on the purchase of many technical inputs or other services for their operation. However, it is important to realise that there is a large flow-on effect from their operation in regional communities.



“There is a noticeable (negative social) effect in regional towns when people are off work”



Fodder manufacturers

The live export trade is not only an important marketing destination for livestock in Western Australia but acts as a significant end customer of feed products. During the sea journey, sheep are fed on a pellet typically consisting of 50% hay or straw, 30% grain barley, 10% lupins and the balance of bulk roughage and urea. Straw is also supplied for bedding on voyages.

There are three feed manufacturers based in regional WA that supply feed products to livestock export businesses. The proportion of product sold to domestic or export markets¹⁶ versus livestock export varies from business to business. For some manufacturers that have focused their business on products to supply livestock export (sheep and cattle), more than 90% of their revenue comes from the trade. Other operators have diversified over time into alternate markets including domestic feedlots, other export markets or specialty domestic markets.

The moratorium on the live sheep trade significantly impacted the operations of fodder manufacturers that rely heavily on this market. Planning for fodder manufacture begins 12 months prior to sale; therefore the shipping suspension and moratorium experienced in 2018 and 2019 left fodder manufacturers with no capacity to prepare and adapt to the significantly lower demand for product. Even the three-week extension was problematic for manufacturers as livestock export fodder cannot be stored. For one business that supplies bedding for livestock export shipments, the three-week extension came in at a cost of \$45-60,000.

The dry conditions and limited feed availability in 2019 concealed the potential impact of the moratorium on fodder growers and manufacturers. Fortuitously, the reduced demand for straw and hay to the livestock export market was met with an increased demand for feed by farmers and lot feeders locally. This absorbed some of the surplus fodder products that were left as



a result of the reduced requirements from the livestock export market in 2019 and in turn, saved fodder manufacturers and suppliers from greater financial losses.

Procuring product is now one of the greatest challenges for fodder manufacturers given the uncertainty around the moratorium into the future.¹⁷ The reliability of shipments and therefore the reliability of their market for pellets and straw has been lost.

Fodder manufacturers are an important source of employment in regional WA, providing work for an estimated 100 staff directly, as well as contract balers, bale stackers, engineers, mechanics and straw and hay suppliers. Many of these down chain participants were negatively impacted by the reduced operation of feed manufacturers in 2018 and 2019.

One manufacturer reported that during the moratorium, they had to reduce their operational capacity to 65-70%. As a result, one-third of their casual staff were not required for this time. Consultation with business owners revealed they too face challenges in securing labour for their regional workforce, which is now exacerbated by the instability.

The uncertainty of the live sheep export market has many feed manufacturers considering alternative markets for their straw, hay and pellet products.

Alternative markets for fodder manufacturers in WA include:

1. East coast domestic markets¹⁸

2. Local feedlots and other small alternative markets

3. Northern cattle fodder markets (including live export)

4. High quality export markets

There is only a limited market for pellets and so the reduction of orders from the live sheep export trade would mean less business to be shared across the existing feed suppliers. Increased supply in the local fodder markets in WA will add competitive pressure to suppliers currently operating in these markets. This would likely see rationalisation. Fodder manufacturers, contractors and growers are fearful that the collapse of the live sheep export trade will see the WA fodder market saturated.

The export hay market has grown over the last four years, supplying feed to international dairy and beef herds. While some of the best hay making conditions are in WA, not all regions can produce the high quality hay required to supply export markets. Businesses that supply to export markets must compete at an international level. With this, comes added volatility. There may be opportunities for fodder manufacturers to diversify into supplying export markets if they have access to surplus high quality hay. Further investigation is needed to determine the viability.

¹⁶ Domestic fodder markets include registered premises, on farm and specialty fodder markets while export markets refers to the direct shipment of fodder to international markets.

¹⁷ Straw hay is collected in September for the following year's requirement.

¹⁸ Only viable when there is a deficit on the east coast and surplus in Western Australia



COREY WEGUELIN - CONTRACT BALER

For a rural town, \$1.5 million of expenditure is a significant contribution. This is the amount that one family-run contract baling business in the wheat-sheep zone of WA contributes to the local town in an average year.

However, as a flow-on effect of the moratorium, Corey expects the figure to be cut back to just \$500,000 for the 2019-20 season. Based in a region that produces low quality fodder, his main buyer is a nearby fodder manufacturer that supplies to the live sheep trade, and orders for baling have been halved this season. This impact flows down the value chain, with Corey making the following adjustments to his own spending and servicing requirements:

- 40,000 litres of fuel usually purchased a year, down to 15,000 litres in 2019-20
- Purchase of string at rural merchandise retailer reduced by half
- Less work to local mechanic for parts and services
- 15-25 farmers have also had hay/straw volumes cut back. Many farmers will burn what is not sold, leaving foregone revenue of up to \$150,000 each.

Contract balers and stackers

In regions that supply straw and hay to fodder manufacturers, a significant proportion of the work for contract balers and stackers is derived from the livestock export trade. The demand from the live sheep export trade is not only steered through feed manufacturers for voyages but also registered premises that hold shipping wethers for the live trade. The reliance by hay and fodder contractors on the livestock export trade ranges between 40% and 95%.

Due to the time lag between baling and usage, either as a raw product or in the manufacture of feed, the 2019 moratorium did not impact the procurement of hay and straw or the requirement for balers during the 2018-19 harvest. However, contractors experienced reduced demand for their services in the 2019-20 harvest, with their customers accounting for the moratorium continuing in 2020.

One contract baler, who supplies a major feed manufacturer, explained he was expecting order volumes to halve in 2019-20 compared to the previous season. Where in a busy year he relies on eight additional contractors to service the demand in his region for the fodder manufacturer, he did not engage any subcontractors this season.

Contract balers and mobile stackers may also service alternative straw and hay consumers; however, they are restricted to the quality of product in their region and location of the consumer. The cost of freight limits their opportunities to service alternative market segments.

The repercussions also extend to fodder growers. The reduced demand by the

livestock export trade flows down the chain to reduce the volumes of straw and hay purchased from growers.

In addition, there are a large number of participants that are impacted by the reduced workload of contract balers and stackers. These include rural merchandise stores which supply string for baling, fuel suppliers, local mechanics and transport operators.

Livestock agents

In Western Australia, the livestock export trade underpins 35% of the agency business. The primary role of a livestock agent is to find the marketing option for their customers' stock that will return the most value. The live export trade is an important market for agents, firstly as a sale channel for stock transactions and secondly for its contribution to sale competition as a buyer independent of the processing market.

The impact of the live sheep export moratorium on individual livestock agents is dependent on their region. In key supply regions, some agents noted that traditionally 30-40% of their revenue was reliant on the live sheep export trade, but with the moratorium this had dropped to 5%. However, agents located in regions that produce stock bred to supply processing markets experienced minimal impact.

The agent's salary is a commission from the farmer based on the prices received for the stock sold. Thus a reduction in the number of buyers, diminished saleyard competition and fewer marketing options all contribute to lower prices received

for stock and in turn, lower returns to the agent. Similarly to shearing service providers, in key live export regions livestock agents had to manage a condensed season in 2019 as farmers offloaded stock either before or after the moratorium.

While the economic implication of the moratorium is not as significant for livestock agents as for other participants in the supply chain, they have still experienced consequences.

Agents were challenged to find

“The moratorium has disrupted the marketing system that we’ve had in place for decades”

alternative buyers for light stock during the moratorium. Even sheep of a condition suitable for local processing were not guaranteed a sale, with many abattoirs fully booked at peak times. On average, WA has greater distances for sheep to travel to meatworks when compared to the eastern states. Along with the seasonality of supply, at times this places pressure on the ability to access ‘kill space’.¹⁹

The east coast store lamb market offered relief for agents and farmers trying to sell wethers in 2019; however as stated earlier in this report, agents acknowledge that this market will only be available during periods of recovery from drought or when strong seasonal differences exist between western and eastern states.

¹⁹ Herrmann, R., Dalgleish, M., Agar, O. & Horton, J. (2017) *Sheepmeat market structures and systems investigation. Meat & Livestock Australia Limited*. North Sydney, Australia.



Exporters

The impact of the moratorium on exporters is twofold. Firstly, there is the economic cost of carrying non-income producing assets through the moratorium period, coupled with the reputational cost of an inability to provide reliable supply to markets where we have a long history of trade and business relationships. Secondly, there is the cost borne by contract staff that are engaged directly by exporters (and occasionally importers) only when livestock export vessels are scheduled to operate. These include veterinarians, on-board stock handlers, sheep buyers and quality control staff.

In relation to economic costs, the exporters consulted noted a reduction in revenue of 10-25% during the suspension in the trade during 2018 and a 5-15% reduction in revenue during the 2019 moratorium period. It is important to note that for several exporters, reductions in live sheep export revenue were partially recouped by involvement in an expanded live cattle trade, lot feeding operations and/or involvement in shipping contract services or export of live sheep from ports outside of Australia. However, revenue that was recouped was not enough to cover the opportunity that would have been available had the live sheep export trade been open during part, or all, of this period. Furthermore, revenue declines do not take into account lost income from reduced stocking densities on vessels at other times of the year.

Some exporters were able to re-direct their business focus during the 2019 season as there was increased lead time in which to plan, compared to the 2018 suspension. Indeed, one exporter revealed that during the 2018 suspension a planned voyage was

cancelled on short notice which portrayed a negative image of Australia as a reliable provider of live animals and inflicted unrecoverable losses.

Some exporters have noted a change to their business structure due to the moratorium with a shift toward lot feeding for domestic and boxed/carcase export markets. This has meant less than 20% of their revenue stream is now attributable to the live sheep export trade. This has also coincided with a downsizing of assets and a reduction in FTE staff numbers and use of contractors by over 50% as the new structure is less labour intensive.

Veterinarians

Specialist veterinarians practise at a number of possible points in the live sheep export supply chain. They include on-farm practitioners, Australian Government Accredited Veterinarians (AAVs) involved in preparation of animals prior to voyage, and on-board AAVs during the voyage. The AAV accreditation allows veterinarians to work on both cattle and sheep shipments under contract with exporters.

The level of reliance of AAVs on the live sheep export trade is dependent on their point of practice and stock type experience. On average, AAVs in Western Australia rely on the live sheep export trade for 25-50% of their income. Their role in live export is specialised, hence there is little opportunity to supplement or substitute their contract work with other clients during the moratorium. Consultation revealed there are two primary options for AAVs in place of live sheep export work:

1. Cattle live export AAV or stockman
2. Shift away from livestock export to on-farm or small animal clinical practice.

On-board AAVs are more commonly multispecies, servicing both cattle and sheep voyages. Many also operate as on-board stock handlers when required. These contractors have the ability to shift to servicing live cattle export voyages during the moratorium, as some contractors did in 2019. This decision can come down to personal preference, with handling practices being more physically demanding for cattle compared to sheep.

The moratorium on the live sheep export trade reduced the amount of available work for AAVs during 2019. Greater competition to service cattle voyages was evident. However, the on-board AAVs consulted were able to source sufficient cattle voyage contract work or work in other sectors to avoid any significant loss to their regular income. There is no financial forfeiture associated with contracting services to cattle voyages compared to sheep voyages for AAVs.

There is generally less interchangeability between servicing sheep and cattle for AAVs that prepare and inspect stock prior to loading, even though they too hold the qualifications to practice on both species. For a number of pre-voyage AAVs that have invested in solely servicing sheep exports, as one might expect, the moratorium and shipping suspension had major negative economic implications. They were left without work and income for the entire period in 2018 and 2019. One pre-voyage AAV reported that they would not be able to sustain their business if the moratorium isn't reduced or lifted. The burden was not only financial but the negative mainstream social perceptions of their work and the added stress of unemployment were mentally tolling.

For pre-voyage AAVs with experience in cattle treatment, opportunities to service cattle export voyages may supplement their work on sheep voyages in order to retain income through the moratorium periods. It is noted that this may not be an appropriate option for all, as it does involve demanding travel commitments or out of state transfer. Consultation revealed that a number of AAVs have already diversified their income streams away from the livestock export sector.

Quality assurance technicians are also subcontracted by a number of AAVs to prepare and inspect sheep prior to loading for the voyage. These subcontractors were consequently also devoid of work during the trade halts. As a flow-on implication of any reduction in contract work for AAVs, expenditure with veterinary supplies retailers was proportionally reduced.

Associated down chain participants

Several diverse services in Australia are owned, employed or contracted by exporters and importers to fulfill each shipment. They include registered premises staff, sheep buyers, shipping services, stevedores, AAVs, stock handlers, quality control specialists, ship owners and port authorities.

Many of the individuals consulted for this research found no alternate revenue streams within their field of skills during the moratorium period. Sheep buyers, stock handlers, quality assurance technicians and quality control specialists were in many cases without work and income for 16 weeks in 2019. Assuming a full working year with 100% of their income generated through the live sheep export trade, this equates to a 30% potential reduction from their average yearly income.



Sheep buyers

Sheep buyers have had to cope with further economic consequences as a result of the newly changed regulations in shipping practices. Contracted by exporters, sheep buyers receive commission for the number of head of stock procured for their client. With the reduction in stocking density on vessels, the purchase quotas for sheep buyers has been reduced and as a result, so has their income potential. One sheep buyer estimated that their quotas per shipment were reduced by one third in 2019. This

buyer also calculated that their 2019 income would be 29-38% lower than average as a result of the moratorium and regulatory changes.

Sheep buyers are very limited in their capacity to diversify into new market segments without compromising their contract services to live sheep export clients. Competition rules restrict sheep buyers from purchasing stock of a similar type for multiple companies. Under these circumstances, a buyer that is regularly contracted by exporters cannot buy shipping type sheep for any other client

such as a processor or feedlot. This leaves trade lambs as the only market that buyers could potentially diversify into servicing.

Due to the small size of this market and regional production confines, there is little demand for sheep buying in this market. Some buyers in trade lamb regions may be able to supplement up to an estimated 15% of their income by buying for this market. This work would be spread across the year and is unlikely to fill the income gap caused by the live sheep export moratorium.

Shipping services

Port based shipping services such as stevedores and on-ship management services are engaged by a diverse range of industries. Participants reported that live sheep exports constitute 15-25% of their revenue in a normal year. However, due to the diversity of industries they service, there is more opportunity to offset the loss of live sheep shipments with other customers and markets compared to many other participant groups in the value chain.

During the moratorium period in 2019, shipping services businesses looked to service alternative shipments. An increase in live cattle shipments during this period in 2019 assisted in keeping revenue steady despite the loss of sheep shipments. Thus, these businesses felt little to no economic impact of the moratorium in 2019. Staffing requirements were, however, affected by the reduction in livestock shipments. For stevedores, loading a single livestock vessel is very labour intensive compared

to other non-livestock shipments. Up to 125 staff are involved in the process when livestock are involved.

These businesses will either access new markets or reduce staff levels if the moratorium continues in its current form.

Cattle farmers

The live sheep export trade also facilitates the trade of live cattle from Western Australia to Middle Eastern markets. From 2014 to 2018, on average 68,643 cattle were exported live from WA ports to Middle Eastern markets each year.²⁰ Of these cattle, 78% were transported on vessels that also carried live sheep. Most consignments from WA to the Middle East transport sheep as the majority and cattle as the small minority.

As an example, Israel is a key market for shorthorn bulls (200-400kg). Sheep consignments from WA to the Middle East provide market access for these specialty bulls as the demand is not substantive to fill a full consignment of cattle. There is no alternate market for bulls of this type and size, which meant these cattle had to be carried through until shipments resumed following the live sheep export suspension and moratorium periods.

This came at a disadvantage for cattle farmers that supply this market, as they acquired additional costs to feed and carry. Should the moratorium continue, these specialty cattle trading businesses will need to adapt their operation to either change their sale window or increase bull weight to access alternative markets.

²⁰ Data source: Department of Agriculture, Livestock mortalities for exports by sea. Accessed on: 14/11/2019. Available at: <https://www.agriculture.gov.au/export/controlled-goods/live-animals/live-animal-export-statistics/reports-to-parliament>

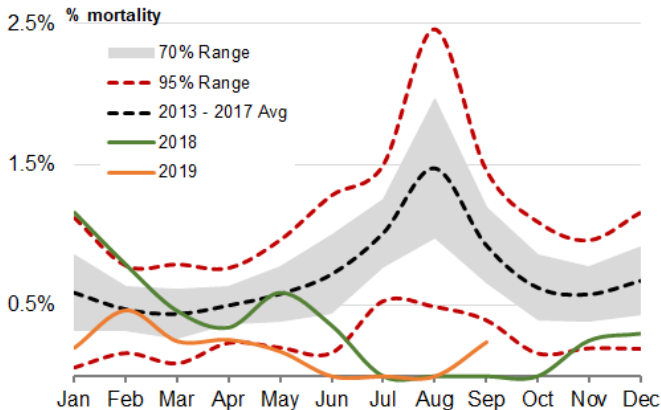


ANALYSIS OF SHEEP DELIVERY SUCCESS RATES

The implementation of changes to shipping practices during the 2018 season saw a significant reduction in live sheep export mortality rates, even accounting for the moratorium period during June to September 2018 when no live sheep export vessels were sent from Australia.

Furthermore, average monthly live sheep export mortality data demonstrates that levels have significantly reduced since the start of 2019, trending below the average seasonal pattern that occurred between the 2013 to 2017 seasons. Mortality levels in 2019 were also below the normal variation in mortality that could be expected for each month except February (Figure 4).

Figure 4. Live sheep exports mortality – seasonal



Source: DAWR, Mecardo

Figure 4. highlights the average monthly trend in mortality for the 2013 to 2017 seasons, the normal range (grey shaded zone), which represents one standard deviation above/below the average and is also represented by the low and high columns on Table 1. Furthermore, an extreme boundary is shown (upper and lower red broken lines), which represent two standard deviations above/below the average and is represented by the extremely low and extremely high columns on Table 1.

Focusing on the mortality data for live sheep exports during the 2019 season (January to September), we can see that mortality levels were 54% below the historical seasonal average and have been beyond the extremely low threshold during May and September (Table 1).

Table 1. Live sheep mortality rates

Monthly mortality statistics (2013 to 2017)						
	Average	Extremely Low	Low	High	Extremely high	2019 season
Jan	0.59%	0.06%	0.33%	0.86%	1.12%	0.20%
Feb	0.47%	0.16%	0.32%	0.63%	0.78%	0.47%
Mar	0.44%	0.09%	0.27%	0.62%	0.79%	0.25%
Apr	0.50%	0.24%	0.37%	0.64%	0.77%	0.26%
May	0.58%	0.20%	0.39%	0.78%	0.97%	0.18%
Jun	0.72%	0.16%	0.44%	1.00%	1.28%	
Jul	1.01%	0.53%	0.77%	1.26%	1.50%	
Aug	1.48%	0.49%	0.98%	1.97%	2.46%	
Sep	0.93%	0.40%	0.66%	1.20%	1.46%	0.24%
Oct	0.63%	0.16%	0.39%	0.86%	1.10%	
Nov	0.58%	0.20%	0.39%	0.77%	0.96%	
Dec	0.68%	0.19%	0.43%	0.92%	1.16%	

Source: DAWR, Mecardo

Mortality data trends for 2019 suggest that current heat stress management plans and the changes implemented as a result of the McCarthy review in 2018, as well as management practices introduced by exporters, have improved welfare outcomes and significantly reduced the risk of heat stress incidents.

Traditionally, the northern hemisphere summer period can see mortality peak due to a higher incidence of heat stress events. However, during the 2018 season, the trade was suspended during this time, resulting in no recorded mortalities from July to October.

Figure 4 shows that the usual peak in mortality occurs during the northern hemisphere summer period. With the extension to the moratorium, in 2019 no shipments occurred during the most high-risk period.

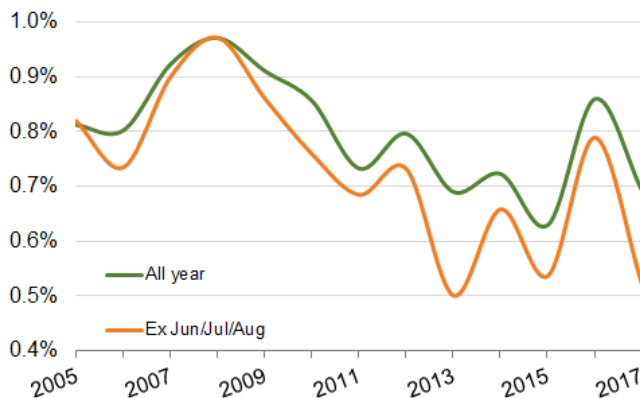
Analysis undertaken by Mecardo on the historic live sheep export mortality data between 2005 and 2017 demonstrates how a three-month moratorium would have impacted the trend in mortality. The three-month moratorium scenario has been assessed for consignments exiting Australia between the June to August period.²¹

Figure 5 illustrates the annual average trend in mortality rates, showing the actual historic trend with the trade operating unhindered all year (green line). Overlaid on the chart is the trend with the June to August moratorium period excluded (orange line). Clearly, there is a reduction in mortality rates when the three-month moratorium exists.

²¹ June to August is the current moratorium period proposed by industry.



Figure 5. Live sheep export mortality trends

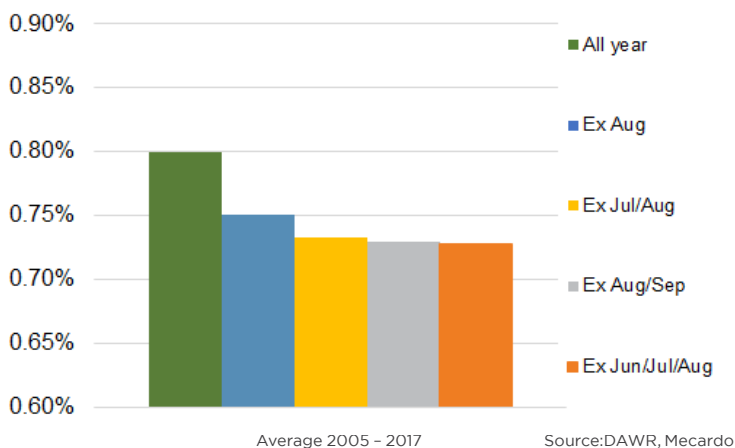


Source: DAWR, Mecardo

To quantify the magnitude of the reduced mortality rates under the proposed moratorium, and to assess the effectiveness of various moratorium periods, scenario analysis was undertaken on the average long-term mortality figures (Figure 6). The following scenarios were back tested to determine the potential impact on mortality rates:

1. One-month moratorium in August
2. Two-month moratorium July to August
3. Two-month moratorium August to September
4. Three-month moratorium June to August

Figure 6. Live sheep average mortality with moratorium scenarios



During the 2005 to 2017 period when the live sheep export trade operated without a moratorium, the long-term average mortality rate was 0.80%. This equates to 400 sheep per shipment of 50,000 head.

Enforcing a moratorium only during August would see the long-term mortality rate decline to 0.75%, equalling 375 sheep out of a total of 50,000. Under the scenario of a two-month moratorium from July to August or August to September, the mortality rate would be reduced to 0.73% or 365 sheep.

The current moratorium period proposed by industry is from 1 June to 31 August. A three-month moratorium during this time would also result in a long-term mortality rate of 0.73%, or 365 sheep per voyage of 50,000 head. No significant difference exists between a two-month or three-month moratorium during these dates in terms of mortality rates per shipment.

In terms of sheep survival, the difference between a one-month moratorium and a three-month moratorium is estimated at 10 sheep per shipment of 50,000.

It should be noted that if there continues to be a reduced mortality rate on shipments, achieved by the changes to shipping practices, the effect of the moratorium on sheep survival will be reduced compared to the historical scenarios analysed.

While a moratorium limits the chance of heat stress periods occurring, it has a significant impact upon participants within the live sheep export industry across the supply chain.



CONCLUSION

Data from January to September 2019 indicates that shipping practices put in place the previous year for live sheep exports to the Middle East are having a positive impact on mortality rates. In 2019, mortality rates were 54% below the historic seasonal averages calculated from 2013 to 2017.

This shows that the current heat stress risk assessment tools utilised by exporters, regulations, and changes being implemented by industry are working to improve welfare outcomes more broadly on voyages. This is a positive outcome for all involved in the live sheep export trade.

However, there is a widespread concern under the surface of Western Australia's sheep industry that continued uncertainty, instability and negativity will see the demise of crucial support services in the supply chain. This would be the 'nail in the coffin' for sheep farmers, who are resoundingly fed up with the portrayal of their industry and increasing regulations, compounding the struggle of recent poor seasons.

The 'fight for acres' has already claimed some of the WA flock. There are plenty of anecdotal reports of mixed farmers restructuring their enterprises away from sheep by converting land to cropping or adding cattle. Some farmers are choosing to let their yards and shearing sheds decay as they turn to 100% cropping enterprises. Not only does this increase farm risks by narrowing the economic base of farm incomes, it is detrimental to land values.

While participants such as farmers, livestock agents and shipping services would adapt and manage their system to work around an annual three-month moratorium, the same optimism can't be applied to the security of many other participants in the supply chain. The cost of the moratorium to these businesses is not exclusively in the form of lost revenue. Many are faced with additional strain from distorted workloads, cashflow issues, asset devaluation and competition for labour; often compounding to take effect on the social and mental wellbeing of those impacted.

Should the moratorium continue in its current length, rationalisation will undoubtedly occur in service sectors of the value chain. This is a concern for an industry stretched by the tyranny of distance and at the core of regional communities.

The full impact of the moratorium on the entire WA value chain must be considered, along with the measured improvements achieved through regulatory and self-imposed changes to shipping practices in order to secure a sustainable and valuable live sheep export trade for all participants into the future.





CONSULTATIONS

Number of consultations

AAVs	6
Exporters	6
Farmers	13
Feed suppliers/manufacturers	6
Industry representatives	4
Livestock agents	7
Quality control specialist	1
Saleyard managers	2
Shearing services	7
Sheep buyers	2
Shipping/wharf services	2
Stockman	1
Transport operators	7
Total	64

ABOUT MECARDO

Mecardo (A Nutrien Ag Solutions Business) is an independent, specialist agricultural market intelligence and advisory business.

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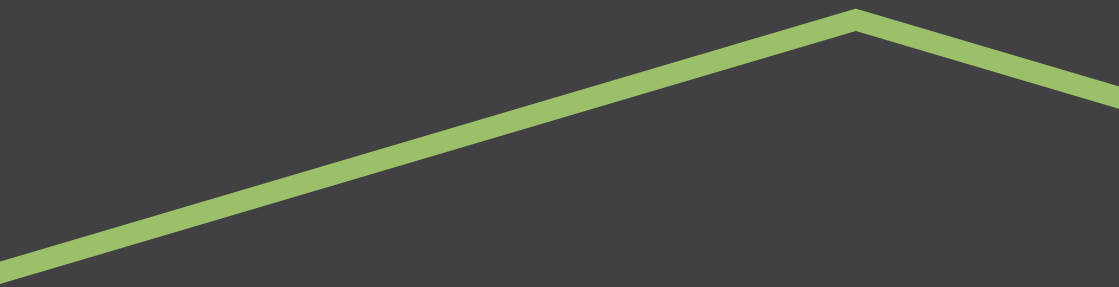
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