

19 October 2018

Technical Reference Panel
Heat Stress Risk Assessment Review
Department of Agriculture and Water Resources
GPO Box 858
CANBERRA ACT 2601

Dear Reference Panel Members

RE: Review of the Heat Stress Risk Assessment Model for Livestock Exports

Cattle Council of Australia is the peak industry body for Australian grass-fed cattle producers and, as such, supports ongoing market access, including through the live export trade, and the increased competition this generates for the Australian cattle industry.

Cattle Council provides this submission into the *Review of the Heat Stress Risk Assessment Model for Livestock Exports* noting the issues paper and Reference Panel's focus on the Heat Stress Risk Assessment (HSRA) model as it applies to the export of live sheep. Nevertheless, the Council believes that shipping parameters affecting the sheep trade will have significant implications for the live cattle trade and so feels obliged to provide comments into the review.

Cattle Council's submission is **attached**. The Council provided submissions to Stages 1 and 2 of the review of the *Australian Standards for the Export of Livestock*; consequently, some of the comments in this submission overlap with those in the two previous submissions.

In providing this submission, Cattle Council confirms its support for ongoing research and development specific to the livestock export industry. Such research is integral to improving the predictive capability of the model to enhance animal-welfare outcomes and the ongoing adoption of improved practices utilised by the live-export sector.

I Cattle Council requests the Panel to note this ongoing research and develop a mechanism to incorporate this into the HSRA model as appropriate, and so avoid the use of subjective, and likely inconsistent, methods to assess animal welfare.

Cattle Council reserves the right to provide additional comments following release of the Technical Advisory Committee's draft report.

Yours sincerely



Ms Margo Andrae
Chief Executive Officer

Attachment: Cattle Council of Australia submission



ATTACHMENT: CATTLE COUNCIL SUBMISSION

OPENING COMMENTS

Following release of the report by Dr Michael McCarthy¹ in May 2018, the Department of Agriculture and Water Resources (DAWR) "...committed to conduct consultations and testing of key factors impacting the live sheep export trade. In particular, the development of a welfare-based approach to heat stress risk assessment (HSRA) in response to recommendations 3–5, 7 and 8 of the review."

Cattle Council is therefore aware of the Reference Panel's focus on live sheep when assessing the HSRA model; nevertheless, the Council believes that any changes to the shipping parameters affecting the sheep trade will have implications for the cattle trade and so feels obliged, on the grass-fed cattle sector's behalf, to provide comments to the Panel.

The Technical Reference Panel comprises Professor Andrew Fisher, Professor Clive Phillips and Associate Professor Anne Barnes, all regarded as independent and eminent experts in animal welfare, heat stress and animal science.

The Panel will be receiving technical advice on ship ventilation from the Australian Maritime Safety Authority and on a range of other matters from prominent researchers who specialise in the fields of allometric modelling (used in this case for calculating stocking densities) and relevant measurements for assessing animal welfare.

The cattle sector is a part funder of much of this research and, as such, supports its expected prominence in the Panel's considerations. Cattle Council makes the following general comments as an overlay to the scientific and technical input otherwise provided to the Panel.

COMMENTS IN RESPONSE TO POINTS IN THE ISSUES PAPER

1. MORTALITY LIMIT AND HEAT-STRESS THRESHHOLD (MCCARTHY REC 3: INDUSTRY SHOULD MOVE FROM A RISK ASSESSMENT BASED ON MORTALITY TO A RISK ASSESSMENT BASED ON ANIMAL WELFARE.)


Mortality is the most, if not the only, objective measure available for assessing animals' adverse reactions to the environment around them. Complementing mortality data with other measures for animal welfare means introducing some element of subjectivity.

While ever the HSRA model is the basis for regulating loading densities and having significant implications for the future issuing of export licences, subjectivity in the HSRA model must be avoided.

Cattle Council supports the principle of using non-mortality measures to 'inform' of the possible need for intervention. Identifying and validating such measures, particularly when behavioural indicators are involved, have proved difficult issues for the livestock industry, but such measures are becoming better understood and increasingly available.

These measures should be used to complement the HSRA model rather than be built into it. In other words, they should be used judiciously and as 'alerts' or early

¹ Independent Review of Conditions for the Export of Sheep to the Middle East During the Northern Hemisphere Summer



warnings for livestock handlers rather than as the basis for punitive actions, at least until the impact of their use is better understood.

Accurate recording of subjective measures is critically important. Through accurate recording, these normally subjective data can be combined with a wide range of other variables and analysed retrospectively to assess their R² values and, therefore, whether having them included in the HSRA model in the future is possible and justified.

In the meantime, existing parameters within the predictive HSRA model should be focused on minimising mortality rates and progressively refined to ensure its predictive capacity is enhanced.

While outside the scope of the Panel's review, the predictive capacity of the HSRA model should be augmented with careful breed selection and an emphasis on backgrounding or 'conditioning' of animals before departure. To quote from Cattle Council's submission to Stage 2 of the ASEL review: "It is noted that *Bos taurus* and *Bos indicus* cattle handle climatic conditions differently, which should be factored in when assessing the HSRA. Account should also be made of situations where *Bos taurus* cattle have in some way been pre-conditioned for the voyage and the climate into which they are being sent." Legislating such responsible practice would be difficult; it is more the responsibility of industry to encourage it.

2. HSRA SETTINGS (MC CARTHY REC 4: AS AN INTERIM MEASURE, IT IS RECOMMENDED THAT THE RISK BE SET AT A 2 PER CENT PROBABILITY OF 5 PER CENT OF THE SHEEP BECOMING AFFECTED BY HEAT STRESS...)

This is a technical matter involving differences in temperature, humidity, animal weight, pen air turnover (PAT) and so on. The work commissioned by MLA/LiveCorp for the McCarthy review (Stacey Agnew, *Effect of livestock heat stress risk standard on stocking densities for sheep on live export vessels*) appears particularly revealing when assessing the impact of these parameters on stocking densities.


Cattle Council is accepting of this research and makes the following more general comments.

While a "2 per cent probability of 5 per cent of the sheep becoming affected by heat stress" seems a statistically valid benchmark, there would be wisdom in ensuring this is sufficiently conservative to prevent *any* future incidents of reportable deaths from heat stress, validated by appropriate autopsy performed by a qualified vet. Needless to say, another incident involving any livestock (whether sheep, cattle or buffaloes) will impact future exports of *all* livestock.

Additionally, because transporting livestock into the northern summer is more risky than at other times of the year, Cattle Council wonders whether more flexibility could be built into the model. That is, should the risk be confined to certain months of the year (currently nominated as May to October) or be assessed on climatic conditions forecast for the travel period? While the modelling and graphing done by Agnew would have these appear the same, it may in reality be that 'spikes' in detrimental climatic conditions could occur either side of these months.

To quote from Cattle Council's Stage 2 ASEL Review submission:

For assessing voyagers destined for climatically risky markets, an alternative approach to using 'dates of departure' would be to assess each potential voyage on disparity data; that is, by recognising that climatic extremes don't always align



with calendars, it may be more prudent to use weather-forecasting technology to estimate the two extremes (and not averages) of 'temperature' and 'relative humidity' likely to be experienced throughout the voyage and adjust load parameters accordingly before the livestock embark.

3. HEAT LOAD EXPOSURE AND DESTINATION PORTS (REF MCCARTHY REC 2: 'ALLOMETRIC' PRINCIPLES WITH A K-VALUE OF 0.033 BE USED TO DETERMINE STOCKING DENSITIES DURING MAY TO OCTOBER, UNLESS OVERRIDDEN BY THE HSRA MODEL'S ASSESSMENT.)

Consistent with LiveCorp's submission into the *Review of Australian Standards for the Export of Livestock (ASEL) – Stage 1*, Cattle Council considers there is a range of elements that need to be considered in determining an appropriate k-coefficient; these include:

- the type of animal and its condition;
- the extent of packing that is appropriate – what is acceptable based on research, evidence, observation and judgment; and
- the type of journey – what activity is required during the voyage; what risks need to be managed.

A k-coefficient also needs to reflect the interactions between livestock and their ability to time-share space in the performance of their activities. This requires practical evidence, rather than simply multiplying the space required for one animal.

It is also important to recognise that while theoretical models, such as allometric equations, are useful tools in determining stocking densities, they do not replace practical evidence and must be informed by assessments of the outcomes achieved in the actual export situations.

Finally, in response to the statement in the Issues Paper that, "This approach does not take account of the fact that decks with higher PATs are capable of being stocked at higher densities than decks with lower PATs, depending on conditions" (p. 18), Cattle Council believes each deck should be treated individually when determining stocking densities, provided there are sufficient data to support robust decision making.

CLOSING COMMENTS

Sound science must continue to underpin the rules governing the livestock-export trade.

Australia is already a world leader in researching every aspect of the livestock-export trade and applying improvements where beneficial. This research must be continued and, hopefully, adopted also by other exporting countries that currently fall behind Australian standards.

Appropriate livestock selection and fit-for-purpose, pre-embarkation livestock preparation are as important to the management of the animals' welfare as is on-board management. This must be impressed on all suppliers of the livestock and taken into account as part of Australia's efforts to guard against future incidents.