1 March 2019

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

Dear Panel,

Heat stress risk assessment for the export of sheep to the Middle East

Cattle Council of Australia (Cattle Council) is the peak industry body representing Australian grass-fed cattle producers and supports the market access, improved risk profile and increased competition that livestock export generates for Australian product.

Cattle Council provides this submission into the *Heat stress risk assessment for the export of sheep to the Middle East* 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.

Cattle Council notes the government's efforts to reinforce that the review is focused specifically on sheep and any attempts to impose the revised HSRA model on the cattle industry would undertake a similar process to that which has resulted in the proposed model for sheep. Nevertheless, Cattle Council believes that shipping parameters proposed by the HSRA model will eventually have significant implications for the live cattle trade and potentially the broader supply chain.

Given the significant and ongoing improvements that the livestock export industry has made in implementing better animal welfare practices on livestock export vessels, as demonstrated by the Australian Livestock Export Council's decision to place a moratorium on sheep exports during the northern hemisphere summer, it is concerning to the Australian cattle industry that the HSRA Model, as proposed, will impact the live export trade by preventing some cattle going into markets (i.e. Turkey and Israel) where they are transported on the same vessels as sheep.

The Australian cattle industry has worked on continuous improvements to animal welfare along the entire supply chain including within the livestock export sector. As part of this program the HotStuff model was developed to determine the heat stress threshold for each category of livestock based on breed, body weight and condition, coat length and acclimatisation. An anticipated wet bulb temperature increase is calculated and added to the anticipated weather conditions for a voyage (based upon historical data of the time of year). The programs and processes employed by the livestock export industry to improve animal welfare outcomes are based on rigorous scientific research undertaken through world renowned institutions.

Since the introduction of HotStuff and associated investment in heat stress management, the incidence of major heat stress events has substantially reduced across MENA cattle and sheep markets. It is therefore of considerable concern to the cattle industry that despite the ongoing improvement to animal welfare, the live cattle export industry continues to come under significant threat largely due to incidences related to the sheep industry.

A review of HotStuff was undertaken in 2008[1] by a panel with expertise in animal welfare physiology, climatology, engineering and statistics to specifically examine the scientific basis, methodology and assumptions of the core elements that underpin the model. The panel concluded that the methodology and the assumptions central to the model are sound, reasonable and supported by scientific literature. HotStuff is subject to continual updates and review with a new version (Version 5) currently undergoing final testing.

To date the Australian Government has been supportive of the live export trade as demonstrated by its development and commitment to the Exporter Supply Chain Assurance System (ESCAS). This long-term approach taken by industry and government to improve animal welfare and traceability throughout the livestock export supply chain provides the basis upon which the industry can reliably invest in research and development to ensure the sustainability of the industry and the communities that rely on it.

It is therefore of great concern that much of the research currently being undertaken by industry, particularly on animal welfare indicators, could have provided considerable data and objective measurements to support the Australian Standards for the Export of Livestock (ASEL) and HSRA model. To enable the live export industry to operate with any certainty it must be able to continue the significant scientific research to facilitate continuous improvement of animal welfare over the short and long term without political interference. Cattle Council urges a realistic yet conservative approach to the setting of animal-health and welfare parameters as they apply to livestock being shipped

Cattle Council looks forward to further consultation with the Technical Reference Panel on this important process. If you wish to discuss any elements of this submission, please contact my office on (02) 6269 5600.

Yours sincerely

Ms Margo Andrae
Chief Executive Officer

[1] Drewe Ferguson (CSIRO) Andrew Fisher (CSIRO) Barry White Robert Casey (RT Casey Pty. Ltd.) Bob Mayer (QDPI&F); 2008; Review of the Livestock Export Heat Stress Risk Assessment Model (HotStuff)

Heat Stress Risk Assessment

In assessing the scientific evidence upon which the Technical Reference Panel developed the draft report, Cattle Council, Sheep Producers Australia, National Farmers' Federation, and the Australian Livestock Export Council engaged the services of a technical advisory group (TAG) with significant experience in animal and veterinary sciences, including livestock heat stress, thermal stress models and live export. Further background on the TAG is available at Attachment A. The advice from the TAG and that from LiveCorp supports Cattle Council's response to the recommendations in the Review of the Heat Stress Risk Assessment Model for Livestock Exports.

The TAG concluded that the 98-percentile wet bulb temperature (WBT) upper limit used in the model is not consistent with the science available and does not result in improved welfare outcomes. Consequently, there is a significant bias placed on the HSRA model as the predictor of animal welfare outcomes without proper consideration of the revised standards for the preparation and shipping on livestock through the review of the ASEL. Given this document is still to be finalised it is difficult to provide input on the HSRA model without clarity on the implications of incorporating the HSRA model into the ASEL.

Cattle Council notes that WBT is not a measure of welfare and its use is proposed on the assumption that a range of welfare challenges are experienced, however makes no allowance for duration or diurnal and nocturnal variation and its impact on the heat loads experienced by sheep. Data indicates that both nocturnal and diurnal variation have a significant impact on animal welfare and much larger mortalities would be expected should this variation not occur.

The paucity of scientific evidence to support the proposed 28^{o} WBT and the subsequent narrow focus on what sets the parameters for an acceptable animal welfare outcome is of particular concern to the cattle industry. The assumption being that if the proposed HSRA model is applied to the live sheep export trade based on the same level of supporting evidence, taken to its logical conclusion, this should also apply to the cattle industry and potentially the entire supply chain.

Suggested improvements to the proposed model

Cattle Council recognises there are a number of considerations, including those outlined in the McCarthy Review, that need to be assessed in order to ensure good and continuous improvement to animal welfare and, consistent with the above comments, is concerned about the focus on the WBT as the potential sole determinant in assessing the risk associated with an impending voyage.

Cattle Council supports the principles behind allometric modelling for calculating stocking densities, the variations applied to different classes of livestock and journey duration. These factors, combined with pen air turnover which can be independently verified should be used in the calculations for approved arrangements for sheep travelling to the Middle East.

Cattle Council considers that more robust, standardised data collection be incorporated into the reporting requirements from Independent Observers and that these reports be made available in a timelier manner than currently exists. This would include temperature duration, diurnal and nocturnal variation. This data combined with the ongoing research and development will do much to improve the methodology on which more accurate predictions of animal welfare impacts can be determined.

Attachment A

Technical Advisory Group (TAG)

Dr Bruce Allworth	Bruce is currently Professor of Livestock Systems and Director at the Fred Morley Centre at Charles Sturt University's School of Animal and Veterinary Sciences (Wagga). Bruce graduated as a vet from Sydney University (BVSc, Hons), and worked at both Massey University and Melbourne University's Mackinnon Project before operating his own Sheep and Cattle Consultancy practice for 25 years. Bruce completed his PhD in footrot, and is a Fellow of the Australian College, and a registered Sheep Veterinary specialist. Bruce is also a European Veterinary Specialist in Small Ruminant Health Management and a Diplomat of the European College of Small Ruminant Health Management. Bruce operates his own sheep and cattle property in southern NSW.
Dr John Gaughan	John Gaughan is an Associate Professor with a 25-yr research career in the areas of livestock heat stress. He has authored or co-authored 12 book chapters, 44 refereed publications, 72 conference proceedings, and 20 research reports. He has been graduated 11 PhD and 3 MPhil students. He is recognised as a leader in cattle heat stress research in Australia and internationally. His research has helped to develop thermal stress models for feedlot cattle (now part of the industry QA programme), dairy cows, sheep and horses. His research has been conducted in Australia, Thailand, USA, Mexico, Saudi Arabia, Kuwait and the UAE. His worked has focused on gaining an understanding of physiological responses to acute and chronic heat stress, the development of management and nutritional strategies to ameliorate heat stress, and the likely impact of future climatic conditions on animal production and animal well-being.
Sue Middleton	Sue has extensive farming and business experience. She is a Director of Brennan Rural Group (BRG), a diversified family farming business with interests in broadacre; horticulture and livestock farming. She is also a former RIRDC 2010 Australian Rural Women of the Year. Sue also has extensive change management experience across agricultural businesses, commodity groups, regional and local communities. She is also an entrepreneur and experienced Board member; with past roles including the Chair of the Western Australian Regional Development Trust; LandCorp, Commissioner of the Agricultural Produce Commission, Chair of Landcare, and the Australian Research Council. She is also leading a delegation of WA women who will be visiting Canberra in early February to engage with a range of politicians on Live Sheep Exports.

Steve Meerwald	Steve Meerwald is the current Chief Executive Officer of Harmony Agriculture and Food Company, a grower and supplier of food to domestic and international markets — from the grazing of livestock in Victoria and Western Australia, through to domestic customers and customers based in north-eastern China, South East Asia and the Middle East. Steve is the former Managing Director of Wellard Rural Exports, a leading exporter of livestock from Australia to destinations around the world. Steve is currently a director of a number of livestock and agribusiness related ventures. He is a former director of LiveCorp, Australian Livestock Exporters Council. He served as Chairman of the Western Australian Livestock Exporters' Association, as a Trustee of the Murdoch University Veterinary Trust, and as a Member of Live Export Industry R&D Committee.
Dr Robin Jacobs	Robin has a long career in veterinary and livestock science as a veterinarian who graduated from the University of QLD in 1978. Most of Robin's initial experience was as a field veterinary officer for the WA Department of Agriculture until 1999. He then undertook a PhD in glycogen (dark cutting) in lambs with Dave Pethick at Murdoch university. Since then Robin has worked as a meat research scientist firstly at Murdoch and then DAFWA with various projects. Notably these have been in relation to phenotyping the information nucleus flock, colour stability, very fast chilling and dry ageing sheep meat. He has acted as Director but is currently a Senior Research Officer with the West Australian Department of Primary Industries and Regional Development.