

2024-26 Producer identified RD&A priorities

Council: SALRC

Table 1: Identify research, development or adoption gaps, activities, and strategies to achieve the desired outcome/s.

MLA Program area	Priority Rank	Committee origin	New or ongoing priority? Monitoring or emerging?	Outcome sought: Describe the issue and the outcome(s) producers/industry are seeking.	To adequately achieve the outcome, identify R&D and/or adoption gaps or strategies: <ul style="list-style-type: none"> For R&D, clearly identify the research gap. For adoption, detail a possible strategy that producers would engage with to achieve the intended outcome.
Animal Wellbeing	AW Priority #1	SNSW, WVIC, SEVIC/TAS, CVIC	New	Develop science-based options for improved prevention, treatment and management of pink eye in sheep and beef.	<p>R&D Gap:</p> <ul style="list-style-type: none"> - Identify predisposing and causal factors to assess risk of pink eye infection for livestock classes (calves at foot, weaners, yearlings etc; ewe, lambs, weaner lambs etc). - An effective, long-acting vaccine that covers all strains (not just 3 bacterial strains). - Develop and commercialise a process to make effective farm-specific vaccines from pink-eye infected animals on individual farms. - Determine if vitamin AD&E at weaning prevent pinkeye through improved immunity and eye health. <p>Adoption Gap:</p> <p>The adoption gap in preventing, treating, and managing pink eye revolves around the dissemination and uptake of currently available knowledge and effective solutions among stakeholders:</p> <ul style="list-style-type: none"> - Development of a clear, concise, and effective communication package that outline best practice management tactics to minimise pink eye. This includes addressing various causal factors such as environmental stress, eye damage, flies, and dust. - PDS's and advice from service providers (stock agents, vets, livestock consultants) and producer group networks would assist adoption of knowledge. - Develop a suite of resources for Producers that include fact sheets that can be downloaded and disseminated at extension events by extension professionals (vets, advisors), stock agents, rural merchandise stores). Include best practice management options. Include factors such as cost,

					<p>accessibility, and perceived efficacy of preventative measures are influencing the willingness of stakeholders to adopt new practices.</p> <p>Further comment, an effective preventative solution would be rapidly and widely adopted by producers.</p>
Animal Wellbeing	AW Priority #2	NNSW, CVIC	Ongoing	More effective management of ectoparasites in cattle (tick, buffalo fly, midges, paralysis tick) and sheep (lice, flies), particularly in unmulesed flocks	<p>R&D Gap:</p> <ul style="list-style-type: none"> - Engage with agriculture chemical / medical/ pharmaceutical entities to identify new actives and identify integrated use of actives on-farm that meet OH&S, residue and environmental regulations, particularly in management and prevention of flystrike in sheep (i.e. alternatives to CLIK for long-acting control). - New technologies that utilise an IPM approach to control of ectoparasites. - Identify and develop Biocontrol management as part of an integrated management program. - Map emerging endemic parasite movements and incursions. - Identify and quantify genomics in sheep and cattle for ectoparasite tolerance. <p>Adoption Gap:</p> <ul style="list-style-type: none"> - Develop a farmer and government supported map of current, emerging parasite movements/incursions movements to be hosted on MLA website and shared across extension sites DPI/LLS. Initiate options for engagement and extension such as farmer citizen science for reporting parasite presence. - Support farmer engagement and adoption with resource links and up to date information on management options and best practice. Ensure MLA/AWI courses such as Lifetime Ewe, Prograze and the suite of EDGE Courses utilise and include latest research findings in course content. - Awareness and monitoring of the efficacy of actives on individual farms. - Integrated ectoparasite management approaches that are contextualised to specific regions. - Communication of results of current and recent PDS's for best practice management of unmulesed flocks through stock agents, vets, livestock consultants and producer group networks. - Use producer groups to discuss different management options in the local environment.

					Further comment: The capability of ParaBoss and the Ag360 .
Grassfed Beef Productivity	GBP Priority #1	SA	New	<p>Increase the ability of producers to respond to declining feed quantity and quality in pasture through strategic supplementary feeding. Supplementary feeding strategies and methodologies in the rangelands to maximise production and profit from available feed each season;</p> <ul style="list-style-type: none"> - Minimise carbon intensity per kg beef through improving ADG birth to sale; - Protect natural resources and increase long term drought resilience. 	<p>R&D Gap:</p> <ul style="list-style-type: none"> - Develop real time (in-paddock) diagnostic test for pastures to assess nutritional value (energy, protein, fibre) as well as quantity. - Real time testing of manure to identify impact of feed supplements on feed use efficiency. - Genetics for improving feed use efficiency and measuring the phenotypic expression. <p>Adoption Gap:</p> <ul style="list-style-type: none"> - Demonstrate to producers a cost benefit analysis of supplement feeding in the rangelands more often than just drought time. - Southern Beef project extended to include a module for rangelands. - Expansion of the Northern Breeding Business Pathways to Practice (NB2) program to southern rangelands. - Use local producer groups to disseminate knowledge about nutrition management.
Grassfed Beef Productivity	GBP Priority #2	SEVIC/TAS SA	New	<p>Increased understanding of the impacts on red meat yield and quality, of early life experiences related to feed, health supplementation, pain relief and disease management.</p>	<p>R&D Gap:</p> <p>Quantifying the impacts of a range of management interventions to calves, weaners and yearlings, on KG of meat produced and meat quality eg feed quality, proactive health protocols, vaccination, supplementation.</p> <p>Adoption Gap:</p> <ul style="list-style-type: none"> - Findings are condensed and communicated clearly and simply in terms of production gains and cost benefit analysis with communications packages which suit current industry trends related to how farmers access information. - Develop a suite of resources for Producers that include fact sheets that can be downloaded and disseminated at extension events by extension professionals (vets, advisors, stock agents, rural merchandise stores). Include best practice management options. - Credentials on management practices of young cattle that reduce stress be developed for supply chain data.

<p>Sheep Productivity</p>	<p>SP Priority #1</p>	<p>WVIC, SEVIC/TAS, CVIC SA</p>	<p>Ongoing</p>	<p>Utilising in-paddock technologies to provide real time data and actionable insights to producers, to reduce labour intensity, increase labour efficiency and identify animal productivity improvement</p>	<p>R&D Gap:</p> <ul style="list-style-type: none"> - Evaluation of smart sensors and technology such as accelerometers, GPS smart tags, pedigree match-maker, walk over weighing, facial recognition technology, to enable prompt treatment or adjustment of management practices. - New rapid timely sensors that evaluate wet/dry status and BCS for sheep in commercial situations. Dexu sensors that also assess fat and muscle for marketing purposes. - Develop additional technologies that diagnose pregnancy status to be brought to market and become available for commercial producers. - Ensure that the data capture and storage model is interchangeable and additive with existing platforms. <p>Adoption Gap:</p> <ul style="list-style-type: none"> - Improved understanding of the cost/benefit (and or return on investment / break-even point) point of implementing new technologies (i.e. novel eID technology and tag retention). - PDS and communication of outcomes demonstrating use of in-paddock technologies. - Use local producer groups to trial new technologies. - Specific adoption strategies for Rangelands.
<p>Sheep Productivity</p>	<p>SP Priority #2</p>	<p>NNSW, CWNSW, SNSW SA</p>	<p>Ongoing</p>	<p>Maximising female sheep efficiency and reproductive success</p>	<p>R&D Gap:</p> <ul style="list-style-type: none"> - Merino weaner to maiden ewe development/growth and nutrition. - Extra benefits from timely weaning (emissions, labour, welfare, future ewe productivity, meat productivity, feedbase management). - Identify and measure indicators of stress on weaners, in particular weaner behaviour and metabolic indicators. - Model the most productive and profitable adult ewe size in different environments. <p>Adoption Gap:</p> <ul style="list-style-type: none"> - Correlation between ewe and lamb weights (assuming all lambs sold- Total Kg of lamb (meat) produced as a factor of total Kg's body weight of ewes producing it). - Scanning and mob management including nutrition, condition scoring. - Using containment feeding as a tool for reproductive management . - Improve lamb survival in rangelands-both Merino and shedding breeds.

					<ul style="list-style-type: none"> - Provide published case studies, comparing the correlations between ewe and lamb weights across different localities/environments. - Develop resources that compare ewe productivity relative to size, weaning times, welfare, labour, fertility, meat productivity and emissions. - Ensure MLA/AWI courses such as Lifetime ewe management, T90 and the suite of EDGE courses utilise and include latest research findings in course content and provide a mechanism for reporting increased utilisation of research findings in course content. Show clear costs and benefits, using local producer groups to share information for productivity improvement.
Feedbase Production	FP Priority #1	SA	Ongoing	<p>Development of new pasture species and fodder crops to support production, profitability and resilience in response to:</p> <ul style="list-style-type: none"> - Increasing climate variability - Changing rainfall patterns - Changing demands on environmental impacts (GHG emissions, carbon sequestration, biodiversity, nature protection) <p>Note: linkage to Environmental sustainability priority #2</p>	<p>R&D Gap:</p> <ul style="list-style-type: none"> - Continuous R&D in the development of new pasture species and cultivars for a range of environments (including pastoral/rangelands areas). - Quantify Improvements in palatability, persistence and reduction in GHG emissions in feedbase systems. - Real time monitoring of feedbase quality (ME, NDF, protein, moisture and phosphorus) and quantity <p>Adoption Gap:</p> <ul style="list-style-type: none"> - Producers have the tools for species selection fit for purpose: <ul style="list-style-type: none"> o Rainfall o Soil o grazing pressure management o net carbon emissions o length of growing season - Adoption of improved pasture species for mixed cropping/grazing enterprises to be improved by education through the agronomist network and develop content specific for different farming systems (i.e. Mixed cropping/grazing, rangeland). - Increase producer group activity in rangelands. <p>Further Note - R&D Gap and Adoption Gap: Recommendations from the Feedbase Think Tank could be used to form this priority better in developing the Terms of reference.</p>

<p>Feedbase Production</p>	<p>FP Priority #2</p>	<p>SEVIC/TAS</p>	<p>Ongoing</p>	<p>Optimisation of N fixation in southern feedbases</p>	<p>R&D Gap:</p> <ul style="list-style-type: none"> - Validation of N fixation across a range of legume mixes. - Quantification of kg per ha of units of N fixed in various rainfall and soil types. - Identification of different strains of rhizobia and effectiveness. - Identify how to introduce rhizobia strains into an existing legume pasture. <p>Adoption Gap:</p> <ul style="list-style-type: none"> - Economic analysis of productivity and soil health benefits from rhizobia generated soil N. - Soil and plant management package for maximising rhizobia activity. - Education through producer groups and agronomist networks and development of educational materials and training programs for farmers on the benefits of nitrogen fixation and the selection of appropriate legume species. Focus on the cost benefit of improving plant base capacity to fix nitrogen verses purchasing synthetic fertiliser. - Organise field days, workshops, and demonstrations to showcase successful nitrogen fixation practices and technologies. - Develop content for dissemination by extension professionals and producers on monitoring and managing for effective N fixation by legumes in different farming systems i.e. Mixed cropping/grazing, rangelands.
<p>Environmental Sustainability (On-farm)</p>	<p>ES Priority #1</p>	<p>CVIC</p>	<p>New</p>	<p>Edible hay and silage wraps and string commercially available</p>	<p>R&D Gap:</p> <p>Review and test options available internationally under Australian conditions and develop new, suitable products if required.</p> <p>Adoption Gap:</p> <ul style="list-style-type: none"> - Commercial pricing comparable to current wrap products will drive adoption. - Animal health-reduced risk of gut blockages from livestock eating synthetic wraps. - Dissemination of new, different products for demonstration through producer groups.
<p>Environmental Sustainability (On-farm)</p>	<p>ES Priority #2</p>	<p>SEVIC/TAS , CVIC</p>	<p>Ongoing</p>	<p>Fodder for the Future - Develop novel delivery mechanisms to decrease methane emissions in grazing systems, with focus on utilisation of drought</p>	<p>R&D Gap:</p> <ul style="list-style-type: none"> - Identify forage plants that possesses properties to reduce methane production in ruminants.

				<p>and flood tolerant plants that inherently reduce methane production.</p> <p>Note: linkage to Feedbase Production priority #1</p>	<ul style="list-style-type: none"> - Research to identify saponin/tannin production in the plants and other genetic traits or biochemical pathways within the plants that contribute to methane reduction. - Identify the interaction of feed intake and rumen microflora on animal productivity from plant species identified with ant-methanogenic properties and the ability to fix nitrogen. <p>Adoption Gap:</p> <ul style="list-style-type: none"> - Need to engage supply chain stakeholders from seed companies through to red meat processors/retailers to drive adoption. - Education of producers about low methanogenic pasture species through agronomist networks and organisations such as Grasslands Society of Southern Australia. <p>Further Note - R&D Gap and Adoption Gap: Recommendations from the Feedbase Think Tank could be used to form this priority better in developing the Terms of reference.</p>
<p>Items of interest/significance beyond Top 10 Priorities: <i>(NB: These can be relevant to above listed programs, or other program areas.)</i></p>					
MLA Program area	Other #	CVIC, CWNSW, NNSW	New	Novel labour saving technologies on farms, including robotics and data collection with mobile phones, drones, security cameras etc.	<p>R&D Gap:</p> <ul style="list-style-type: none"> - Requires clarification <p>Adoption Gap:</p> <ul style="list-style-type: none"> - Demonstration properties to share knowledge of new technologies
MLA Program area	Other #	WVIC	New	Remote management and delivery systems for livestock nutritional supplements and methane reduction/inhibitor supplements.	<p>R&D Gap:</p> <ul style="list-style-type: none"> - Requires clarification. <p>Adoption Gap:</p> <ul style="list-style-type: none"> - Case studies on demonstration properties using delivery systems.

<p>MLA Program area</p> <p>Animal Wellbeing</p>	<p>AW Priority #3</p>	<p>WVIC</p>	<p>New</p>	<p>Non-invasive methods for castration in sheep and cattle.</p>	<p>R&D Gap:</p> <ul style="list-style-type: none"> - Evaluation of alternative, non invasive options including vaccination. - Evaluation of ceasing castration on growth/production, market accessibility, meat eating quality. <p>Adoption Gap:</p> <ul style="list-style-type: none"> - PDS's and local producer groups to educate producers about new options. - Dissemination of information through vet practices, stock agents and livestock consultant networks.
<p>MLA Program area</p> <p>Animal Wellbeing</p>	<p>AW priority #4</p>	<p>SNSW SA</p>	<p>Ongoing</p>	<p>Measure and map the efficacy of chemical products for control of internal parasites.</p>	<p>R&D Gap:</p> <ul style="list-style-type: none"> - Independent evaluation of the efficacy of existing products in different regions and under different management approaches - Ongoing work is required to reduce dependence on chemical management of internal parasites. Integrated Pest Management principles need to be examined closely. <p>Further note: The need to minimise having to handle individual animals for treatment (i.e. innovative methods of treatment that can be used within feed or medicated water, or biological control of pests in the environment) to reduce labour requirement of treatment.</p> <p>Adoption Gap:</p> <ul style="list-style-type: none"> - Promote and make free drench resistance testing available. - Provide seasonal worm outlooks in areas with high worm burdens. - Workshops with peer-to-peer learning that include group worm testing and shared analysis of results with feedback on recommendations. - Communications package of best practice management tactics to minimise resistance and maximise efficacy of existing products (Similar to the Weedsmart Big 6) – incorporating all the different opportunities to minimise/eradicate internal parasites in a clear, concise and effective communication package.
<p>MLA Program Area</p> <p>Objective carcass and live animal</p>	<p>unranked</p>	<p>SA</p>		<p>Working with the supply chain to solve technological issues that will enable improved compliance to specifications from producers.</p>	<p>R & D gap:</p> <ul style="list-style-type: none"> - Continued focus on supporting processors with the implementation of technology that will enable enhanced feedback to producers to make decisions on farm (hook tracking, objective measurement of carcass and animal health traits).

<p>measurement (Beef and Sheep)</p> <p>MSA team</p>					<ul style="list-style-type: none"> - Continued focus on development of objective measures in the live animal for fat, marbling and glycogen for assessing market readiness, marbling potential and identify dark cutters. <p>Adoption gap</p> <ul style="list-style-type: none"> - Producers involved with the supply chain to understand why compliance is important, analyse carcass feedback and use feedback to develop on-farm solutions to improve compliance (genetics, nutrition, management).
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