CN30 | Carbon Neutral 2030

mla MEAT & LIVESTOCK AUSTRALIA

Supporting carbon neutral red meat production

Catalogue of products and services

This catalogue contains a list of products and services producers can use today or in the near future to make productivity-led emissions reductions and improvements in carbon storage on-farm.

Contents

MLA acknowledges the matching funds provided by the Australian Government to support the research and development detailed in this publication.

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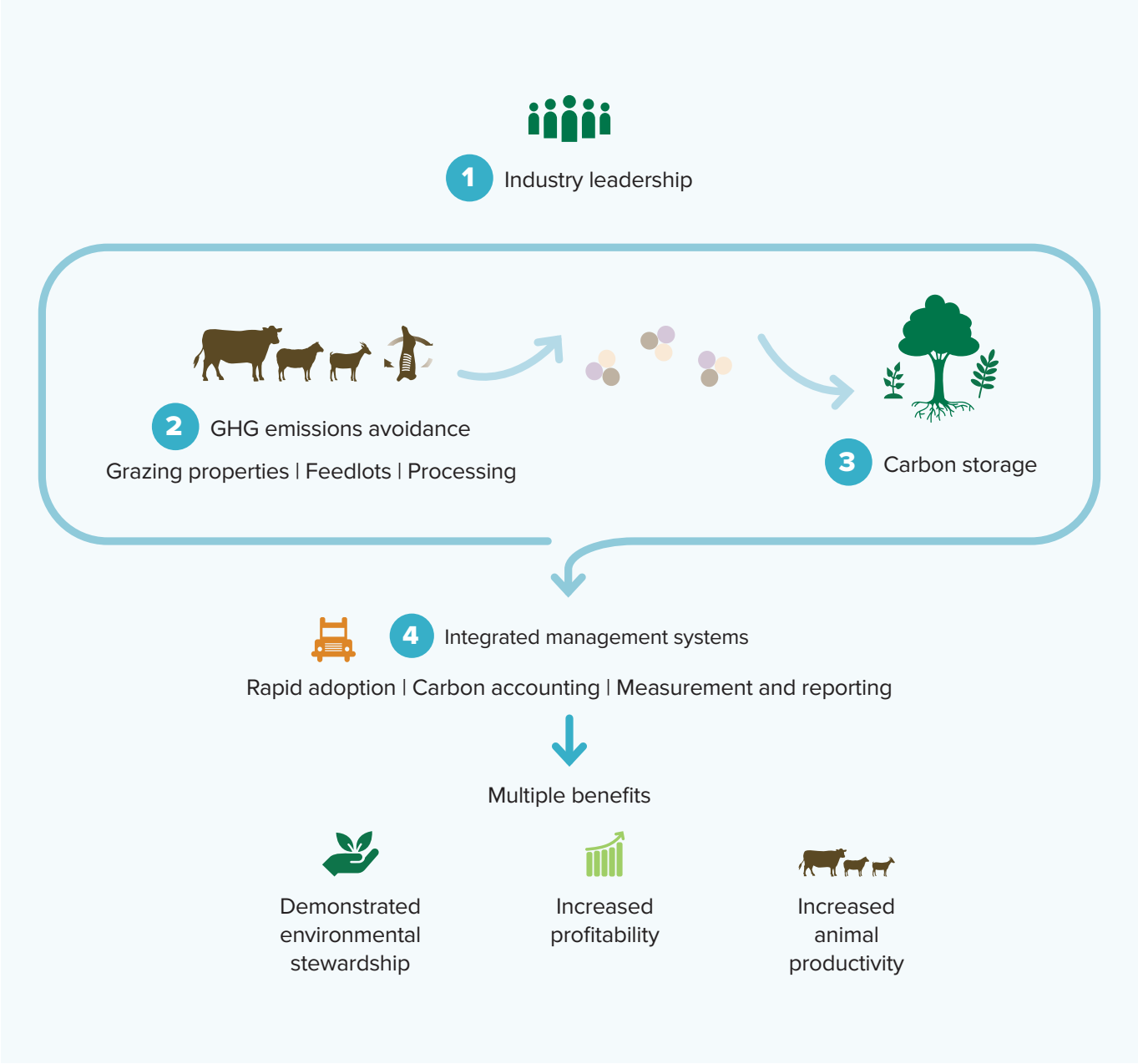
Introduction

The catalogue reflects the four work areas under the Australian red meat industry's Carbon Neutral by 2030 Roadmap (available at mla.com.au/cn30). These areas are illustrated below:



MLA is a Rural Research and Development Corporation and the declared industry marketing body and the industry research body under sections 60(1) and 60(2) of the *Australian Meat and Live-stock Industry Act 1997*.

MLA's purpose is to foster the sustainable development of the Australian red meat and livestock industry, by working in partnership with industry, government and other stakeholders to deliver products and services to the cattle, sheep and goat industries. MLA's stakeholders include red meat and livestock producers, the Australian Government's Department of Agriculture, Water and the Environment, peak industry councils, red meat Rural Research and Development Corporations (RDCs), research partners and commercial and other supply chain participants and groups.

MLA is supporting industry to achieve its Carbon Neutral by 2030 (CN30) target by:

- investing in research, development, adoption and marketing activities to support producers to create and capture value under the CN30 Initiative
- establishing partnerships to accelerate the path to impact for technologies and practices.

This catalogue was compiled using knowledge of products and services with proven benefits for producers. The catalogue will evolve as new knowledge emerges about other existing and emerging products and services. MLA welcomes constructive feedback on the catalogue, as well as products and services that could be added based on objective, peer-reviewed evidence of the benefits to producers. Written feedback can be provided by emailing info@mla.com.au.

Integrated farm management systems tools and enablers

Greenhouse gas accounting tools

Greenhouse accounting frameworks	What	Overview of tools to determine annual net greenhouse gas emissions status of a farm or business.
	Who it's for	Producers and advisors.
	Benefits	Enables calculation of emissions and benchmarking to show progress over time and preparation for carbon projects or supply chain programs.
	Cost	Free.
	How to access	mla.com.au/news-and-events/industry-news/creating-a-carbon-account-for-your-business
Zero30 Beef Farmer Carbon Tracker Tool	What	Online carbon accounting tool to determine annual net greenhouse gas emissions position in a beef business.
	Who it's for	Beef producers and advisors.
	Benefits	Enables calculation of emissions and benchmarking to show progress over time and preparation for carbon projects or supply chain programs.
	Cost	Free.
	How to access	zero30.org.au/zero30-beef-farmer-carbon-tracker-tool-example
Suggested further reading: Carbon accounting technical manual	What	Manual to accompany use of greenhouse gas accounting tools.
	Who it's for	Beef and sheep producers and advisors.
	Benefits	Provides background information on greenhouse gases in livestock systems and explains steps involved in developing a carbon account using the SB-GAF calculator, with case study examples.
	Cost	Free.
	How to access	mla.com.au/globalassets/mla-corporate/research-and-development/program-areas/environment-and-sustainability/carbon-accounting-technical-manual.pdf

Carbon storage measurement tools

Landscape options and opportunities for carbon abatement calculator (LOOC-C)	What	An online calculator for landscape options and opportunities for carbon abatement.
	Who it's for	Producers and advisors.
	Benefits	Allows users to quickly assess options for certain carbon projects and evaluate carbon credit potential.
	Cost	Free.
	How to access	looc-c.farm

Carbon neutral certification process

Climate Active Certification	What	A partnership between the Australian Government and Australian businesses to drive voluntary climate action.

Source: climateactive.org.au/be-climate-active/certification

Who it's for	Supply chain organisations (producers through to retailers), products, services, events, buildings, precincts.
Benefits	Demonstrate climate action, unlock operational savings through production efficiencies, create new revenue opportunities through climate-friendly products, build capacity among team members and strengthen connection with the community on climate action.
Cost	$800–$19,000 depending on emissions boundary scope. Note: this is for the certification process only and doesn't include the cost of purchasing carbon credits if required.
How to access	climateactive.org.au/be-climate-active/certification

Carbon neutral verification service providers

Carbon neutral verification service providers	What	Organisations providing support services for Climate Active Certification.
	Who it's for	Supply chain organisations (producers through to retailers), products, services, events, buildings, precincts.
	Benefits	Gain certification under Climate Action and gather insights about operational cost savings or carbon credit income opportunities.
	Cost	Depends on scope of services. Contact registered consultants contained in weblink below.
	How to access	climateactive.org.au/be-climate-active/certification/register-consultants-climate-active-certification

Read

The Australian red meat industry's CN30 Roadmap	What	A document that describes what a carbon neutral Australian red meat industry means, why industry has set the target, the work areas industry will focus on between now and 2030, and how the industry can execute those work areas.
	Who it's for	All supply chain businesses and advisors.
	Benefits	Enables readers to understand the path ahead and how they could contribute to the CN30 initiative.
	Cost	Free.
	How to access	mla.com.au/cn30
Moving toward carbon neutrality – opportunities for the Australian feedlot industry	What	Technical manual on carbon neutrality for feedlots.
	Who it's for	Lot feeders.
	Benefits	Provides background information on carbon accounting, emissions reductions and carbon neutrality and a series of case studies.
	Cost	Free.
	How to access	mla.com.au/globalassets/mla-corporate/research-and-development/program-areas/feeding-finishing-and-nutrition/pathways-to-carbon-neutrality-for-australian-feedlots.pdf
Coming soon: Guidelines for time-controlled grazing methods to manage soil carbon	What	Management guidelines for producers.
	Who it's for	Producers and advisors.
	Benefits	Explains how time-controlled grazing methods can enable improvements in soil carbon levels when applied with the right mix of plants, soils and rainfall.
	Cost	Free.
	How to access	Contact MLA at info@mla.com.au

Attend

Carbon Neutral Agriculture training program	What	Intensive (two-day) training course.
	Who it's for	All interested stakeholders – producers, advisers, agribusiness service providers and industry and government policy makers.
	Benefits	Gain knowledge of the drivers for carbon neutral agriculture, definitions of carbon neutral and carbon accounting, the emissions sources and carbon sinks in agriculture and the knowledge to assist mitigation options as they emerged from research.
	Cost	Approximately $1,000 per person in a face-to-face group of 20–25 people or $600 online.
	How to access	piccc.org.au/education/carbonneutraltraining.html

bredwell fedwell	What	One-day workshop.
	Who it's for	Sheep producers.
	Benefits	Gain knowledge to analyse and plan a genetics and nutrition regime suited to environmental and market conditions to boost profitability and reduce livestock methane emissions intensity.
	Cost	Varied based on location and deliverer.
	How to access	mla.com.au/bwfw
Grazing Fundamentals EDGE	What	One-day workshop.
	Who it's for	Producers.
	Benefits	Improve understanding of the core principles behind successfully maintaining grazing land condition, carbon storage and long-term productivity.
	Cost	Varied based on location and deliverer.
	How to access	mla.com.au/edge-network
Grazing Land Management EDGE	What	Three-day workshop.
	Who it's for	Producers.
	Benefits	Gain deeper understanding of the core principles behind successfully maintaining grazing land condition, carbon storage and long-term productivity.
	Cost	Varied based on location and deliverer.
	How to access	mla.com.au/edge-network
Nutrition EDGE	What	Three-day workshop.
	Who it's for	Producers (species determined by delivery location).
	Benefits	Gain understanding of how to define production targets for livestock and compare current and predicted performance against these production targets. This enables productivity-led reductions in livestock methane emissions intensity.
	Cost	Varied based on location and deliverer.
	How to access	mla.com.au/edge-network
Breeding EDGE	What	Three-day workshop.
	Who it's for	Northern beef producers.
	Benefits	Develop a breeding program or improve an existing program using reproductive and genetic knowledge and technologies to achieve desired production targets and productivity-led reductions in livestock methane emissions intensity.
	Cost	Varied based on location and deliverer.
	How to access	mla.com.au/edge-network

Profitable Grazing Systems your pathway to success **Satellite-Assisted Forage Budgeting**	What	A training package for participants to learn to use satellite imagery for determining pasture yields.
	Who it's for	Producers.
	Benefits	Satellite-assisted forage budgeting helps producers improve their long-term planning, gain greater consistency and accuracy around pasture growth and carbon storage opportunities.
	Cost	Varied based on the delivery location.
	How to access	mla.com.au/PGS
meatup FORUM	What	Held predominantly throughout southern Australia, MeatUp Forums introduce producers to the outcomes of MLA research and development projects and the next steps to drive profitability and productivity on-farm.
	Who it's for	Southern livestock producers.
	Benefits	MeatUp Forums provide an opportunity for beef, sheep and goat producers to learn something new, stay up-to-date with the latest on-farm research and technologies and meet others working in the red meat industry.
	Cost	$50 ($25 for MLA members)
	How to access	mla.com.au/meatup
beefup FORUM	What	Held predominantly throughout Queensland, the NT and WA, BeefUp Forums introduce producers to the outcomes of MLA research and development projects and the next steps to drive profitability and productivity on-farm.
	Who it's for	Northern beef producers.
	Benefits	BeefUp Forums provide an opportunity for northern Australian beef producers to learn something new, stay up-to-date with the latest on-farm research and technologies and meet others working in the red meat industry.
	Cost	$50 ($25 for MLA members)
	How to access	mla.com.au/beefup

Host or attend

Producer Demonstration Site	What	A technology and practice demonstration program.
	Who it's for	Producers and advisors.
	Benefits	See and feel new technologies and practices to improve business performance, avoid emissions and/or promote carbon storage.
	Cost	Producer groups wishing to engage in a Levy PDS project can apply for up to $25,000 a year for the length of the project. Groups wishing to engage in a co-contributor PDS project can apply for up to $50,000 a year (plus the access fee) for the length of the project.
	How to access	mla.com.au/PDS

Watch

2021 update on the CN30 Initiative	What	15-minute webinar recording.
	Who it's for	All interested stakeholders.
	Benefits	Gain a quick understanding of the Carbon Neutral 2030 Roadmap, industry progress and the path ahead, producer actions for today and insights for tomorrow.
	Cost	Free.
	How to access	youtu.be/Ibi6G6Az0A0
Visual indicators of soil condition Part I: In the paddock	What	Video recording.
	Who it's for	Producers and advisors.
	Benefits	Helps producers recognise and diagnose underlying soil problems, which is important for increasing soil carbon levels alongside other soil health benefits in grazing land.
	How to access	bit.ly/3zHaycl
Visual indicators of soil condition Part II: Plants and pasture	What	Video recording.
	Who it's for	Producers and advisors.
	Benefits	Helps producers recognise and diagnose underlying soil problems, which is important for increasing soil carbon levels alongside other soil health benefits in grazing land.
	How to access	bit.ly/3ocJEH3
Visual indicators of soil condition Part III: Soil surface and clover roots	What	Video recording.
	Who it's for	Producers and advisors.
	Benefits	Helps producers recognise and diagnose underlying soil problems, which is important for increasing soil carbon levels alongside other soil health benefits in grazing land.
	How to access	bit.ly/3upwVC4

Products and services to avoid greenhouse gas emissions

Legumes

Leucaena	What	A tropical and sub-tropical legume.
	Who it's for	Producers in tropical and sub-tropical regions.
	Benefits	Can improve liveweight gain in cattle and reduce methane emissions by 5–20%.
	Cost	Planting after fully removing grass (in an existing pasture situation) can cost around $400/ha, whereas removal of grass in strips reduces costs to around $330/ha. Ripping and fertilizer prior to planting could add another $75–$100/ha depending on the row spacing and machine used.
	How to access	leucaena.net
Progardes	What	Tropical legume adapted to parts of northern Australia that has demonstrated the potential to reduce methane.
	Who it's for	Producers in tropical and sub-tropical regions.
	Benefits	Can improve liveweight gain in cattle and reduce methane emissions by 5–20%.
	Cost	Aerial pre-treatment and seed application of $210/ha or farmed application of $170/ha.
	How to access	agrimixpastures.com.au/progardes-desmanthus

Feed supplements

Grape marc	What	Grape marc, or pomace, is the left over skins and seeds from pressing grapes into wine.
	Who it's for	Lot feeders and producers. Product suited to mixing with concentrate diets or total mixed ration when fed to livestock.
	Benefits	Reduced methane emissions by up to 20% in cattle and 10% in sheep. Additionally, tannins have the ability to bind with protein and can increase animal productivity by rendering protein inactive in the rumen and release it post-rumen for use by the animal for meat or milk production.
	Cost	$15–$30/tonne ex depot
	How to access	Various stockfeed suppliers or commodity traders.
Biochar	What	Biochar is a novel carbonized feed additive sourced from pyrolyzed biomass.
	Who it's for	Producers. Product suited to mixing with concentrate diets or total mixed ration when fed to livestock.
	Benefits	Modify rumen fermentation characteristics and reduce enteric methane emissions. Adding 0.5–1% biochar to cattle's feed could reduce methane emissions by 10–20%.
	Cost	$500–$2,000/tonne depending on type of biomass and processing facility type. Note: producers need to be aware of contaminants from urban waste facilities if wanting to feed to livestock. Livestock consume 300–400g biochar/hd/day.
	How to access	Various stockfeed suppliers or commodity traders.

Coming soon: Bovaer 10	What	A novel synthetic feed supplement (3-NOP) designed to reduce enteric methane in ruminants.
	Who it's for	Lot feeders and producers. Product suited to mixing with concentrate diets or total mixed ration when fed to livestock.
	Benefits	Up to a 90% reduction in methane emissions from cattle when included in diets daily.
	Cost	TBA.
	How to access	Manufactured by DSM and expected to be available in Australia soon. More information at dsm.com/anh/en_US/sustainability/reducing-emissions.html
Coming soon: Asparagopsis	What	A seaweed-based product that has demonstrated substantial methane reductions when fed to cattle in research trials.
	Who it's for	Producers.
	Benefits	Up to a 98% reduction in methane emissions from cattle when included in diets daily.
	Cost	TBA.
	How to access	future-feed.com

Savanna fire management

Savanna fire management	What	Savanna fire management methods.
	Who it's for	Northern savanna pastoral enterprises operating especially in marginally productive, fire-prone and woody landscapes.
	Benefits	Avoid emissions using controlled fire management regimes.
	Cost	Varies by project scope. Costs reflect management approach and labour costs applied.
	How to access	industry.gov.au/regulations-and-standards/methods-for-the-emissions-reduction-fund

Genetics

Cattle	What	Genetic selection for net feed intake efficiency in cattle.
	Who it's for	Beef producers.
	Benefits	Lower methane emissions intensity (methane emitted/kg beef produced) as part of broader genetic selection preferences.
	Cost	Varies by cost of breeding animal purchased.
	How to access	Commercial seed-stock companies.
Coming soon: Sheep	What	Genetic selection for net feed intake efficiency in sheep.
	Who it's for	Sheepmeat producers.
	Benefits	Lower methane emissions intensity (methane emitted/kg sheepmeat produced).
	Cost	Varies by cost of breeding animal purchased.
	How to access	TBC

Energy efficiency

Voltage optimisation & Power factor correction	What	Voltage optimisation & Power factor correction.
	Who it's for	Lot feeders.
	Benefits	Reduce energy use and cost.
	Cost	$10,000–$85,000 for a 20,000 standard cattle unit (SCU) feedlot.
	How to access	Contact local electricity grid operator or electricity retailer.
Variable speed drives	What	Variable speed drives.
	Who it's for	Lot feeders.
	Benefits	Reduce energy use and cost.
	Cost	$7,500 for a 20,000 standard cattle unit (SCU) feedlot.
	How to access	Various specialist electrical equipment manufacturers.
Elevated temperature grain wetting	What	Elevated temperature grain wetting.
	Who it's for	Lot feeders.
	Benefits	Reduce energy use and cost.
	Cost	Highly variable depending on factors such as whether process changes can be easily made and availability of high quality steam.
	How to access	Contact feedlot engineering consultants.

Renewable energy

Renewable energy	What	Solar Photovoltaics.
	Who it's for	Producers and lot feeders.
	Benefits	Offset fossil fuel use, increase energy security and price certainty.
	Cost	A commonly sized 6 kilowatt system costs $4,000–$6,000, a 10 kilowatt system costs $7,500–$10,500.
	How to access	Widely available. Information on where to start at cleanenergycouncil.org.au/consumers/buying-solar/choosing-a-retailer-or-installer

Products and services to increase carbon storage

Legumes

Progardes	What	A tropical and sub-tropical legume.
	Who it's for	Producers.
	Benefits	Improved carbon storage in soil and soil health through additional nitrogen fixation and corresponding organic matter increases.
	Cost	Aerial pretreatment and seed application of $210/ha or farmed application of $170/ha.
	How to access	agrimixpastures.com.au/progardes-desmanthus
Leucaena	What	A tropical and sub-tropical legume.
	Who it's for	Producers.
	Benefits	Improved carbon storage in soil and soil health through additional nitrogen fixation and corresponding organic matter increases.
	Cost	Planting after fully removing grass (in an existing pasture situation) can cost around $400/ha, whereas removal of grass in strips reduces costs to around $330/ha. Ripping and fertilizer prior to planting could add another $75–$100/ha depending on the row spacing and machine used.
	How to access	leucaena.net

Dung beetles

Dung beetles	What	Dung beetles.
	Who it's for	Producers.
	Benefits	Promote soil carbon by improving plant health.
	How to access	dungbeetles.com.au/livestock-producers/buying-dung-beetles

Biochar

Biochar	What	Biochar is a novel carbonized feed additive sourced from pyrolyzed biomass.
	Who it's for	Producers.
	Benefits	Improve soil health and promote plant growth to increase soil carbon levels, particularly when applied in combination with active dung beetle populations to cycle nutrients in soil.
	Cost	$500–$2,000/tonne depending on type of biomass and processing facility type.
	How to access	Various forestry suppliers, organic waste treatment companies, or commodity traders.

Shrubs

Shrubs	What	Multipurpose shrubs such as saltbush species Atriplex nummularia (old man saltbush), Atriplex amnicola (river saltbush), Enchylaena tomentosa (ruby saltbush), Rhagodia preissii (rhagodia) and Eremophila glabra (tar bush), Anameka™.
	Who it's for	Producers.
	Benefits	Increased carbon storage in woody parts of plant and roots, reducing supplementary feeding during times of feed shortage, deferring the grazing of regenerating annual pastures on other parts of the farm leading to increased feed availability, better water use and reduced risk of soil erosion due to perennial nature and deep rooting ability.
	Cost	$0.85–$1.25 per seedling plus establishment.
	How to access	Native to Australia's arid regions and can purchase from nurseries such as chatfields.com.au/our-trees/anameka

Pasture mixes

Coming soon: Pasture mixes	What	Mixes of deep-rooted perennial pasture and legume species
	Who it's for	Producers.
	Benefits	Improved soil carbon levels, improved plant water usage and reduced livestock methane emissions intensity.
	Cost	TBC.
	How to access	Widely available from commercial seed companies. Further information at mla.com.au/research-and-development/Environment-sustainability/Sustainable-grazing-a-producer-resource/climate-variability-using-water-wisely/maximise-plant-water-use/

Trees

Trees	What	Native eucalypts, acacias, casuarinas, other hardwoods or exotic pines, oaks or tropical hardwood species such as Khaya.
	Who it's for	Producers.
	Benefits	Reduced heat/cold stress in livestock, increased pasture production in cold conditions, reduced erosion, improved water quality, increased biodiversity, potential timber sales, carbon storage to offset emissions elsewhere on farm.
	Cost	$2,000–$5,000/ha for establishment depending on extent of ground preparation works required, fencing, labour, tree species, stocking rates and site conditions. Costs of maintenance vary with tree species and uses. Total cost is much lower cost if managing existing trees.
	How to access	Contact local tree seedling nurseries, Local Landcare facilitators, Forestry Australia and Agroforestry and farm tree networks such as treealliance.com.au/resources/farming_guides, as well as forestry consultants and Greening Australia.

Additional materials

Read

Healthy soils hub	What	Tips and tools to get your soils in shape for the season ahead.
	Who it's for	Producers and advisors.
	Benefits	Equips users with practical resources for soil testing and soil management ahead of autumn sowing of pastures and dual-purpose crops.
	How to access	mla.com.au/extension-training-and-tools/feedbase-hub/healthy-fertile-soils
Managing soils to keep them healthy and productive	What	This resource outlines grazing management tactics to promote soil organisms that contribute to healthy and productive soils.
	Who it's for	Producers and advisors.
	Benefits	Using grazing management can promote soil organisms contributing to healthy and productive soils.
	How to access	futurebeef.com.au/wp-content/uploads/Managing-soils-to-keep-them-healthy-and-productive.pdf
Leucaena hub	What	Best practice information on how to establish and manage leucaena in northern Australia. Leucaena is a deep-rooted perennial legume, making it a particularly drought resistant feed option.
	Who it's for	Northern producers and advisors.
	Benefits	Compiles the latest research to help northern producers learn the best ways to establish and manage leucaena.
	How to access	mla.com.au/leucaena
Persistent pastures hub	What	Resources to get pastures performing at their best.
	Who it's for	Producers and advisors.
	Benefits	Assists users in managing pasture growth, assessment, selection, establishment and persistence.
	How to access	mla.com.au/persistentpastures
Grazing land management: Sustainable and productive natural resource management	What	A simple roadmap to understand and implement sustainable and productive grazing land management.
	Who it's for	Northern beef producers and advisors.
	Benefits	Increases understanding around managing land condition, improving the level and evenness of grazed pastures and enhancing cattle diet quality.
	How to access	publications.mla.com.au/login/eaccess?elink=ZASRUPSZcRs8sJMbcQSw
More Beef from Pastures: Drought preparedness	What	A checklist outlining the important issues that should be considered when managing livestock operations under drought conditions.
	Who it's for	Producers and advisors.
	Benefits	Assists and supports the user in planning and decision making when heading into a drought.
	How to access	mbfp.mla.com.au/setting-directions/tool-18-drought-preparedness

Managing ground cover to reduce run-off and water loss	What	Provides information on management of ground cover and rotational grazing to help avoid run-off, water loss and erosion.
	Who it's for	Producers and advisors.
	Benefits	Assists the user in understanding how to maintain ground cover of at least 70% through the selection of appropriate pasture species and tactical grazing to maintain or improve soil carbon levels.
	How to access	mla.com.au/research-and-development/Environment-sustainability/Sustainable-grazing-a-producer-resource/climate-variability-using-water-wisely/maintain-ground-cover/
Looking after drought pastures	What	This resource outlines how to manage pastures during drought.
	Who it's for	Southern producers and advisors.
	Benefits	Assists in ensuring southern pastures survive, recover well and remain relatively weed free during drought to avoid soil carbon loss.
	How to access	mla.com.au/globalassets/mla-corporate/12943-looking-after-drought-pastures.pdf
Genetics hub	What	This resource looks at how better breeding values can help you accelerate your herd or flock's productivity.
	Who it's for	Producers and advisors.
	Benefits	Helps producers select the right animals for their production system and climate to achieve productivity-led reductions in methane emissions intensity.
	How to access	genetics.mla.com.au
Confinement feeding	What	Provides information about confinement feeding during drought.
	Who it's for	Producers and advisors.
	Benefits	Confinement feeding is a practice that aims to promote animal production during dry times, resulting in less methane emissions per kg of liveweight gain, while preserving soil carbon levels by not overgrazing paddocks.
	How to access	mla.com.au/research-and-development/livestock-production/livestock-nutrition/drought-feeding/confinement-feeding