

## Making on-farm strategic changes



### Considering change

Agriculture and farming is constantly evolving, with new information becoming available, new challenges occurring, changes in costs and returns, new expectations from consumers and customers and changing expectations for labour and lifestyle. Producers need to constantly assess whether their current pasture, soils, livestock, grazing and marketing systems and management are applicable to the current and future needs of the property, owner/manager, customers and wider community.

Customer and community views for what is ethical and acceptable change over time. For example, the use of chemicals, degradation of land and waterways, and animal welfare are all of significant importance to the community. Livestock producers must consider these changing attitudes and alter their production systems accordingly.

Running a profitable and sustainable livestock enterprise is all about optimising resources in an efficient production system that will remain profitable and resilient over the short and long term. The components of a livestock production system include soils, feedbase, management, livestock and marketing. As links in a chain, it's important that all components are given emphasis as the overall system will be limited by the weakest link. For example an excellent grazing system will not overcome production loss resulting from poor soil fertility.

It is also important to take a long-term view and not change practices without good reason and careful consideration. For example changing to an alternative animal system in response to current prices needs to be carefully considered, as change is expensive and there is a risk that by the time the alternative system comes into production, the price advantage may have disappeared.

### Strategic changes and tactical decisions

Implementation of on-farm practices can be considered in terms of **strategic changes** and **tactical decisions**. Strategic changes are those that influence the capability of the system in the long term. These may include establishment of new pastures, paddock sub-division, changes to the time of calving or lambing or changes to stocking rates. **Tactical decisions** define how the system is managed in the short term, and are influenced by the given system setup together with the season, market or life situation. Examples include finishing lambs or maintaining the condition of ewes on green lucerne; buying trade stock or cutting hay in a good

### Summary

**This *Exchange* provides insights into the important considerations for farm decision-making. A process is described for producers to take stock of where they are at, where they want to be, and to establish options for change. Different options for strategic changes to the farm system setup are assessed for their likely impact on financial, production, risk, environmental and lifestyle factors for individual farms. The process described forms the basis of a facilitated course — *Whole Farm Grazing Strategies*.**

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season; applying nitrogen to increase winter feed availability; or spraying annual grass weeds or utilising them for winter feed. **Strategic changes** which influence the farm system setup will often determine the range of **tactical options** available in any given scenario.

### EverGraze farming systems — balancing profit, risk, environmental and lifestyle objectives

The national *EverGraze* project designed and tested farming systems based on perennials, which combined best practice with new technology to significantly increase profits and reduce risk while addressing environmental concerns such as dryland salinity, erosion, soil health, acidity and biodiversity.

Both improved pasture (Hamilton, Wagga, Albany) and native pasture systems (Chiltern, Holbrook, Orange, Tamworth) were considered in *EverGraze*. All pastures included a significant legume component, either sown or encouraged by fertiliser application and grazing management.

Most sites used Merino ewes joined to terminal sires and cattle were compared with sheep at Hamilton and Tamworth. In addition to the main research sites, a network of on-farm Supporting Sites and case studies gathered valuable farmer insights into how the new systems worked in practice.

Three key principles formed the basis of *EverGraze* farming systems;

1. The right perennial plant put in the right place in the landscape, for the right purpose, with the right management, improves profitability, risk management and natural resource management simultaneously;
2. Investing in perennials needs to be combined with highly productive livestock and optimum tactical management to achieve profitability, natural resource management, risk management and lifestyle objectives;
3. The right combination of perennials across the farm combined with tactical management creates flexibility and reduces seasonal risks while creating buying and selling opportunities.

By combining the principles with evidence from *EverGraze*, other research and on-farm experience, regional recommendations can be made in three areas:

1. Feedbase; selecting the right plant for the right place for the right purpose and with the right management.
2. Livestock systems; selection of good genetics and an appropriate genotype, stocking rate, timing of reproduction and livestock management to efficiently turn pasture into product.



Every farm is unique

3. Grazing systems and tactical management; grazing to ensure persistence of desirable species, optimum pasture utilisation and tactical responses to meet production targets and maximise profits in good and poor seasons.

### Planning for change

Every farm is unique in terms of the goals, knowledge and aspirations of the owners, soils, rainfall, landscape, enterprise, existing practices and infrastructure. Each farm also has a different set of strengths and limitations which will define the potential opportunities for change. Before making any changes, it is therefore important to define the existing farm setup, and identify the strengths and limitations.

With this context defined, information from research, local benchmarks and experience can be used to assess change options in terms of;

1. The cost and potential impact for your business in terms of profit, risk, environmental and lifestyle implications of each option compared to other competing investment options;
2. The potential fit of new options into your existing management philosophy;
3. Other changes necessary to realise the potential benefit of investment — for example in a given scenario, lucerne may only benefit the system if lambing time is changed to spring.

The steps below provide a process for assessing the strengths and limitations of your farm system. Templates are provided at the back of this *Exchange* (Appendix 1-4) to allow you to assess how your systems are performing and where there are opportunities for improvement. Regional information packages provided on the *EverGraze* website ([www.evergraze.com.au](http://www.evergraze.com.au)) can be used to check how your systems compare with current recommendations.

### Step 1 — Map the farm

To be able to apply *EverGraze* principles and develop pasture establishment and management plans, it is important to identify the pastures, landclasses/aspects and soils that exist on the farm, and categorise these into groups which are managed differently, produce differently and suit different purposes. This will also help you to determine the relative area of existing pasture types and/or areas of different productivity so that you can calculate your current feed supply and demand. Some farmers also find it useful to have a visual representation of the farm for allocation of different stock classes or mobs to sets of paddocks or cells where they are grazed. Being able to accurately measure your paddock sizes is also useful for calculating fertiliser and seeding rates, developing feed budgets and organising your grazing management. Further detail about farm mapping can be found in the *EverGraze Mapping the farm for grazing strategies* module.

### Step 2 — Strengths and weaknesses of system components

Once the farm has been mapped we can use the 'Wagon Wheel' assessment charts (Appendix 1) to have a quick look at the Feedbase, Livestock and Grazing System strengths and limitations on the property. The idea is to place a dot on each spoke of the wheel where you think your property currently performs ie. If you feel that the composition of your pastures is below expectations or district standards/benchmarks, place the dot towards the centre of the wheel. If you believe you are doing very well, place the dot close to the rim.

When you have scored all topics, join the dots to provide a visual appraisal of each component of your system. This is a useful exercise that highlights components of the system that have the capacity to be improved.

**Feedbase analysis** deals with pasture issues such as pasture composition; seasonal feed quality and production; sustainability; soil fertility; and soil health issues such as salinity, organic matter and erosion.

**Livestock assessment** deals with livestock production, stocking rates, reproductive performance and animal health.

**Grazing system analysis** deals with how effectively and efficiently pastures are used across the property; management strategies for manipulating pasture composition and growth; contingency plans for variable seasons or adverse conditions; water supply; the number and size of paddocks and mobs; and fencing to land class.

It is a good idea to show and discuss your assessments with a local producer group, independent agronomists or state agency staff to ensure that you are using appropriate benchmarks to assess how well you are performing. Following this discussion, you might like to reassess your scores.

### Step 3 — Opportunities for improving pasture performance

With the initial Wagon Wheel assessment of pastures and grazing management complete, a more detailed assessment can be undertaken for the range of pastures on your farm — defining your objectives for their use, performance and environmental management; their current composition, soil condition/fertility, persistence and production against these objectives; and ways that they can be improved. The *Pasture Assessment and Opportunities* worksheet (Appendix 2) provides a template and example for undertaking this task. When using the worksheet, as with the feed supply-demand exercise, consider your pastures in groups of paddocks (from your farm map) with similar pasture species, soils and land class. It is useful to have completed soil tests on each of these areas before undertaking this task.

Again, it's a good idea to discuss the results of your assessment with a producer group, local agronomists or state agency staff to help work out underlying problems, solutions and priorities for change. *EverGraze Exchanges on Pastures for Place and Purpose* and the *Nuts and Bolts of Grazing Strategies*, together with *EverGraze* regional packages can be used as a guide when considering changes to pastures.

### Step 4 — Calculate stocking rate and feed supply and demand profiles

Working out monthly stocking rates and describing the whole farm feed supply and demand profile can provide an indication for where the limitations and potential improvements are in the livestock system. This task may be completed before or after completing the Wagon Wheel and pasture assessment exercise — it should help to explain some of the strengths and limitations identified in the Wagon Wheels.

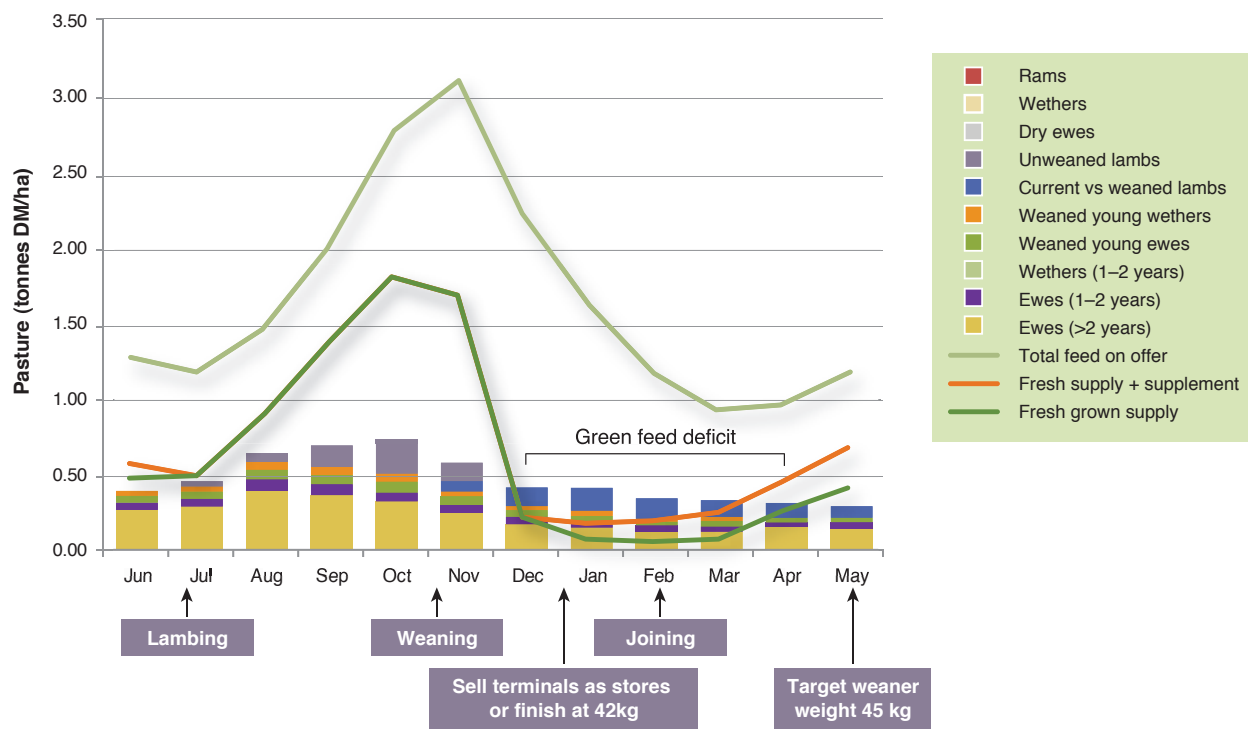
Calculating the monthly stocking rate for each enterprise and for the farm as a whole can be done easily using the *EverGraze* stocking rate calculator which sits within the *Feed Budget and Rotation Planner*. This exercise can help to give a quick snapshot of the livestock demand profile, as well as benchmark your stocking rate against standards in the region.

The MLA *Feed Demand Calculator* provides a more in-depth analysis of feed supply and demand. Using your farm map, you should be able to estimate the area of pastures which perform differently or have different growth patterns across the farm. For example, your farm may be made up of 200ha lucerne, 600ha phalaris and 200ha of run-down pastures. Using this information together with a livestock inventory, the MLA *Feed Demand Calculator* will develop a profile of the overall feed supply against livestock demand. From this, the scale of feed excess and deficit throughout the season can be established.



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FIGURE 1. Feed demand — Self-replacing and terminal ewes, Balmoral Vic



Along the profile, indicate where major livestock operations occur — joining, calving/lambing times, weaning, target markets. This will highlight periods when feed quality (rather than just quantity) is critical to meeting production targets (eg. maintaining weaners over summer).

This initial analysis will indicate where changes can be made to improve the match between feed supply/quality and demand. These could include change in stocking rate, buying/selling times, calving/lambing times, pasture species, soil fertility, grazing management or seasonal tactics such as the use of nitrogen. More detail about seasonal management under a range of season and market scenarios can be found in the *Nuts and Bolts of Grazing Strategies EverGraze Exchange*, and on the EverGraze website under *Grazing Management On-Farm Options*.

## Step 5 — Opportunities to improve livestock performance

With the assessment of pastures and feed profile complete, the next step is to look at the opportunities to improve livestock performance. The *Livestock Assessment and Opportunities* worksheet (Appendix 3) provides a template and example for completing this assessment (use a separate sheet for each major enterprise).

Write down the details of your stock and the performance of the stock for each of the animal parameters. Tool such as the

MLA *Cost of Production Calculator* can be used to help you to assess your farm. You also need to seek out benchmark data for your region for the enterprises that you are running. This data can normally be obtained from state agency staff or private consultants operating in the region — regional packages on the EverGraze website provide benchmarks for some regions. After rating the performance of your enterprise with the benchmark values, consider if you need to change or improve livestock performance and ways that this can be done. Just because the enterprise performs poorly in one area does not necessarily mean that drastic actions are required. For example below benchmark reproductive performance might be OK because wool cut is well above average. Consider what limitations can be most easily and cheaply addressed.

The other important aspects to consider are the potential risks, labour and lifestyle issues. For example, some people are comfortable with higher stocking rates and the requirement to purchase grain in a tough autumn. Other people will be happier to run a lower stocking rate, accept a lower overall gross margin in return and not have to worry so much about a late break. Lifestyle issues are also important. Optimum lambing time might be July–August but August–September may be the best compromise to allow the property owners to pursue recreational activities.

The *EverGraze Livestock Systems Exchange* provides a guide for what needs to be considered when making changes to the livestock system.

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### Step 6 — Stocktake of current performance and priorities

Having undertaken a thorough assessment of the pasture and livestock systems, you should be able to step back and take stock of your current performance and select 3-4 options that offer potential to improve your farm to suit you and your needs. These can be assessed using the *Financial and Intangible Impacts Assessment* template (Appendix 4).

The assessment considers financial issues (return on investment, breakeven time and maximum debt load) and intangible impacts and compatibility factors as discussed below. Financial impact can be measured using the *EverGraze Pasture Improvement Calculator* (available on the *EverGraze* website) or with gross margin programs such as those available from NSW DPI (<http://www.dpi.nsw.gov.au/agriculture/farm-business/budgets>).

Intangible impacts and compatibility factors need to be subjectively assessed in a discussion with other people working on the farm.

Input from other producers, consultants, and state agency staff who have experience with the changes may also need to be considered. *EverGraze* case studies and *Proof Site* key messages provided on the *EverGraze* website identify a range of the factors which need to be considered when assessing the potential impact of practices on farm.

Some compatibility and impact factors to consider against each of the criteria are;

**Other changes;** consider what other changes might be necessary to achieve the potential impact of the investment. For example, change of lambing time to maximise the benefit of sowing lucerne; implementation of rotational grazing to ensure production and persistence of new pastures; or increased stocking rates to capitalise on the benefits of higher soil fertility

**Stress;** consider if the change you are making to the business will increase or decrease the stress involved in managing that business. Stress is a very personal issue, what is stressful to one person is a challenge to another.

**Capital;** some changes will require significant capital. For example, capital fertiliser, pasture resowing, or purchasing additional stock. Consider the cost, availability and implications of allocating capital to each project.

**Risk;** consider how the changes will affect risk, including financial risk, production risk, price risk and seasonal risk. Often a change can replace one risk with another and it can be complex.

**Environmental issues – on farm;** will the proposed change have a positive or negative impact on environmental issues such as erosion, ground cover, waterlogging or salinity?

**Environmental issues – off farm;** will the proposed change have a positive or negative impact on the wider environment, such as water quality, salinity or biodiversity?

**Lifestyle;** consider whether the proposed change will have a positive or negative impact on lifestyle. For example will it reduce days of supplementary feeding or conversely make you a slave to a complex system?

**OH&S;** are there any potential OH&S issues that need to be addressed? For example, additional safety equipment needed, upgrades to machinery and facilities?

**Complexity;** some people like the challenge of running a complex highly performing system, where others prefer the KISS principle. How does the proposed system suit your style?

**Property value;** will the proposed change result in higher value for the property?

**Labour;** consider how the changes will effect the total amount of labour, labour units per DSE, timing of operations, particular skills or training needed and the availability of extra labour if that is required.

**Facilities;** consider how well your existing facilities are suited to the changed enterprise. For example a change in mob size may require a larger holding yard. Are there further gains in efficiency required that can be achieved by improving facilities?

### Step 7 — Summarise key actions, dates and monitoring

Once you've decided on the changes, the next step is to commit to a plan. Appendix 5 provides a one-page summary of where you are at now, where you want to get to, the first steps that need to be undertaken and ways to monitor your achievements. This should be a simple way of making sure that you are on track and is the sort of thing to pin on the office notice board to remind you of what needs to happen by when.

### Step 8 — Integrated seasonal management of livestock and pastures

Once pasture and livestock objectives have been defined, and changes to the system have been identified, the next step is to consider seasonal or tactical management strategies within the system which meet the production requirements of livestock, while also managing production and persistence of pastures. Planning to allocate different livestock to the range of pastures across the farm can become increasingly complex, especially as the number of different land classes/pasture types and enterprises increase. The plan needs to account for seasonal

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variability, and needs to be flexible to respond to signals from monitoring pasture availability, soil moisture/rainfall, livestock condition, livestock market conditions and supplementary feeding costs. Where these signals are aligned to actions, they are known as 'trigger points'.

Although it isn't possible to plan for every scenario, developing trigger points and writing down some seasonal management actions for the range of pastures and livestock across the farm should make it easier to plan further ahead, allowing action to be taken before it's too late.

Development of seasonal action plans and management of pastures and livestock is described in the *Nuts and Bolts of Grazing Strategies EverGraze Exchange*, and on the EverGraze website. The *EverGraze Feed Budget Rotation Planner* can be used to conduct whole farm fodder budgets for the establishment of pasture availability triggers. Livestock condition benchmarks and further information can be found in the *More Beef from Pastures* manual, the *Making More from Sheep* manual, and on the *Lifetimewool* website.

## Step 9 — Support for implementation

Your plan should identify areas which you need to seek advice, up-skill or seek support from a local producer group to help you to implement the change. The second year of *Whole Farm Grazing Strategies* is designed to provide this support. Undertaking short training programs or joining a local producer network group are also options to be considered.

### Acknowledgements

*EverGraze is a Future Farm Industries CRC research and delivery partnership. Information in this Exchange was developed using information from EverGraze and other research.*

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### Tools you can use (see *Tools and Calculators* on the EverGraze website for more options)

- *EverGraze Feed Budget and Rotation Planner (includes Stocking Rate Calculator)*
- *EverGraze Pasture Improvement Calculator*
- *MLA Feed Demand Calculator*
- *MLA Phosphorus Tool*
- *MLA Cost of Production Calculators*

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### Further reading:

- *EverGraze Exchange – Pastures for Place and Purpose*
- *EverGraze Exchange – Livestock systems for profitable and sustainable pasture use*
- *EverGraze Exchange – Nuts and Bolts of Grazing Strategies*
- *More Beef from Pastures – Setting Directions*
- *Making More from Sheep – Plan for Success*

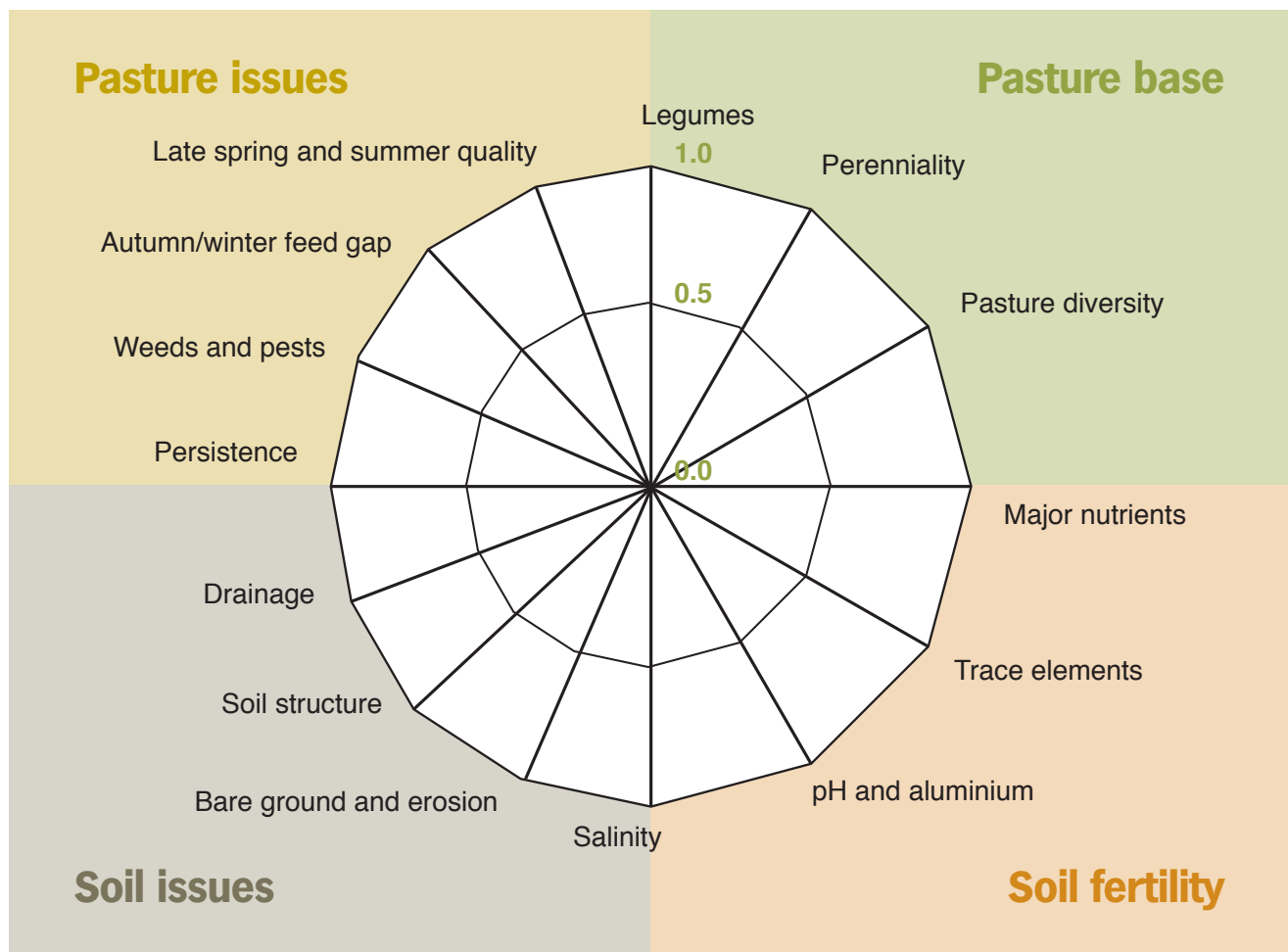
## Appendix 1:

# 'Wagon Wheel' system component analysis

## Feedbase and soils assessment

This spider graph provides a visual assessment of your current perceptions of the feedbase, soil management and vegetation on your farm. Mark on each spoke of the wheel where you currently think you sit. If you think you are doing well, you are happy with say how well your pastures persist, put a mark close to 1.0. If you feel that this is a weakness on your farm, place the dot close to 0.5 or 0.0 depending how you feel. Once you have scored all of the points, join the dots to look for areas where there is opportunity to improve. The table below the wheel provides a guide for how to score each element.

**Feedbase summary:** .....



## Guide to completing the Feedbase and Soils Assessment Wheel

**1.0 = high satisfaction/good, 0.0 = low satisfaction/poor**

<b>Perenniality</b> — how satisfied are you with the proportion of desirable perennial species in your pastures?	1.0 = Very happy 0.0 = Unhappy
<b>Legumes</b> — are you satisfied with the composition, legume content of your pastures?	1.0 = Very happy 0.0 = Very disappointed
<b>Pasture diversity</b> — are there a range of pasture types on the property to use different soils and topography?	1.0 = Yes 0.0 = No, all same
<b>Major nutrients</b> — are the levels of phosphorus, potassium and sulphur optimum or below levels required for the pastures and stocking rate?	1.0 = About right 0.0 = Low or don't know
<b>Trace elements</b> — are trace element deficiencies an issue affecting plant or animal health?	1.0 = Known and no issues 0.0 = Not known or major issue
<b>pH and aluminium</b> — does soil pH match the species used or does it limit persistence and production?	1.0 = No concerns about pH, 0.0 = pH major problem
<b>Salinity</b> — is soil salinity an issue on the property?	1.0 = No issues or all dealt with 0.0 = Significant issue but limited treatment
<b>Bare ground and erosion</b> — is bare ground and/or wind or water erosion an issue and is it managed effectively?	1.0 = No issue/well managed 0.0 = Significant issue, not managed
<b>Soil structure</b> — does the soil have structural issues such as cracking, swelling/shrinking, compaction or water repellence?	1.0 = Known, no issues 0.0 = Not known or major issues
<b>Drainage</b> — is waterlogging an issue and are drainage or tolerant species in place to manage this?	1.0 = No issues or well managed 0.0 = Major issue, not managed
<b>Persistence</b> — how well do the desirable species in the pasture persist?	1.0 = Very well 0.0 = Extremely poorly
<b>Weeds and pests</b> — are weeds and pasture pests a serious problem on the farm?	1.0 = No problem on farm 0.0 = Significant weed issues on the farm
<b>Autumn/winter feed gap</b> — to what extent is winter feed availability an issue?	1.0 = Enough feed, no supplement required 0.0 = Large supplementary feed requirements
<b>Late spring and summer quality</b> — do you run out of quality feed for finishing growing stock at the end of spring or maintaining young or breeding stock through summer?	1.0 = No, there is enough quality feed 0.0 = Significant limitations in growing stock and/or high summer supplementary feeding costs.

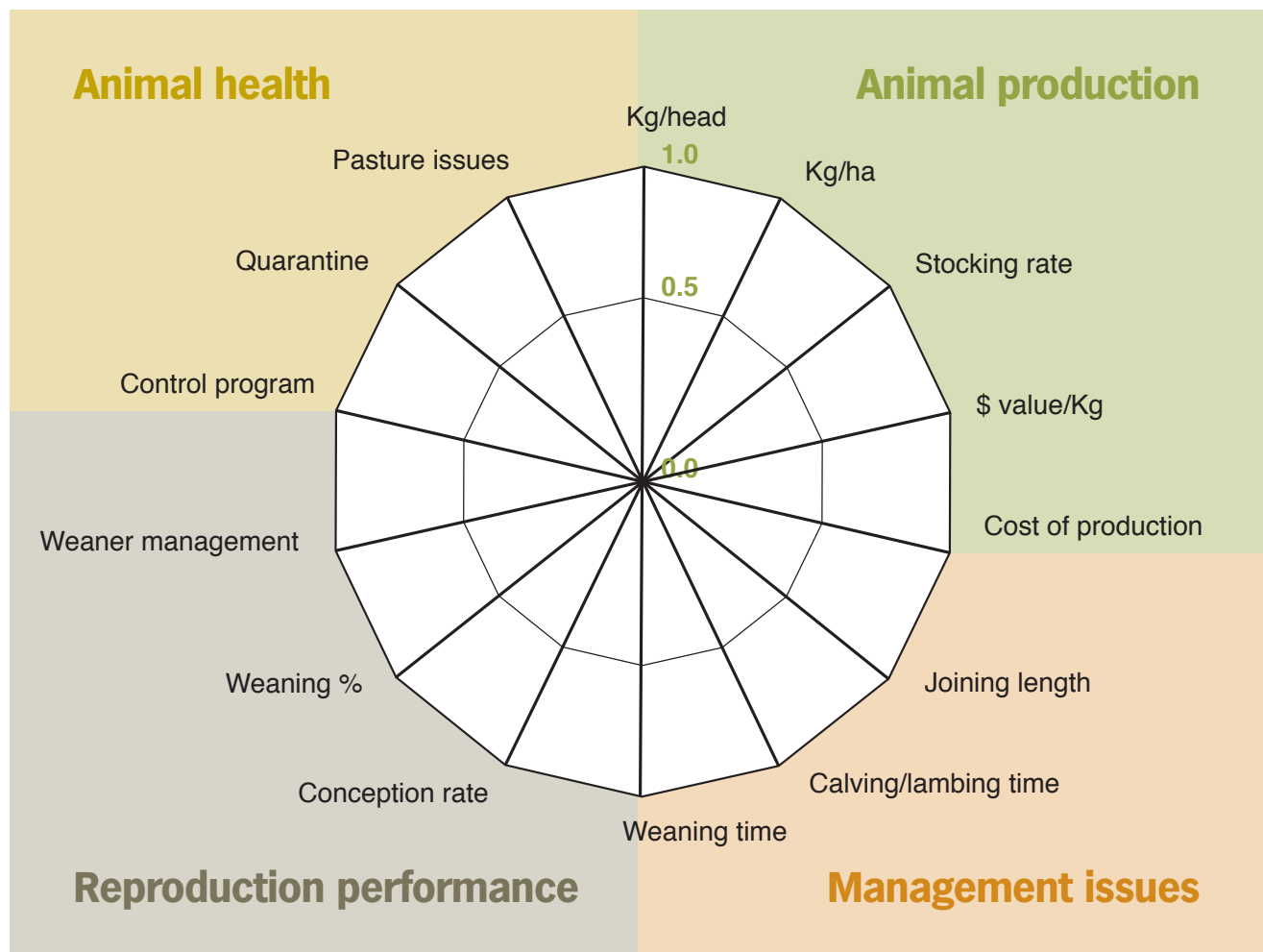


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### Livestock system assessment

This graph provides a visual assessment of your current perceptions of the livestock enterprises on your farm. Mark on each spoke of the wheel where you currently think you sit. If you think you are doing well, you are happy with say production per head, put a mark close to 1.0. If you feel that this is a weakness on your farm, place the dot close to 0.5 or 0.0 depending how you feel. Once you have scored all, of the points join the dots to look for areas where there is opportunity to improve. The table below the wheel provides a guide for how to score each element.

**Livestock summary:** .....



## Guide to completing the Livestock Systems Assessment Wheel

**1.0 = high satisfaction/good, 0.0 = low satisfaction/poor**

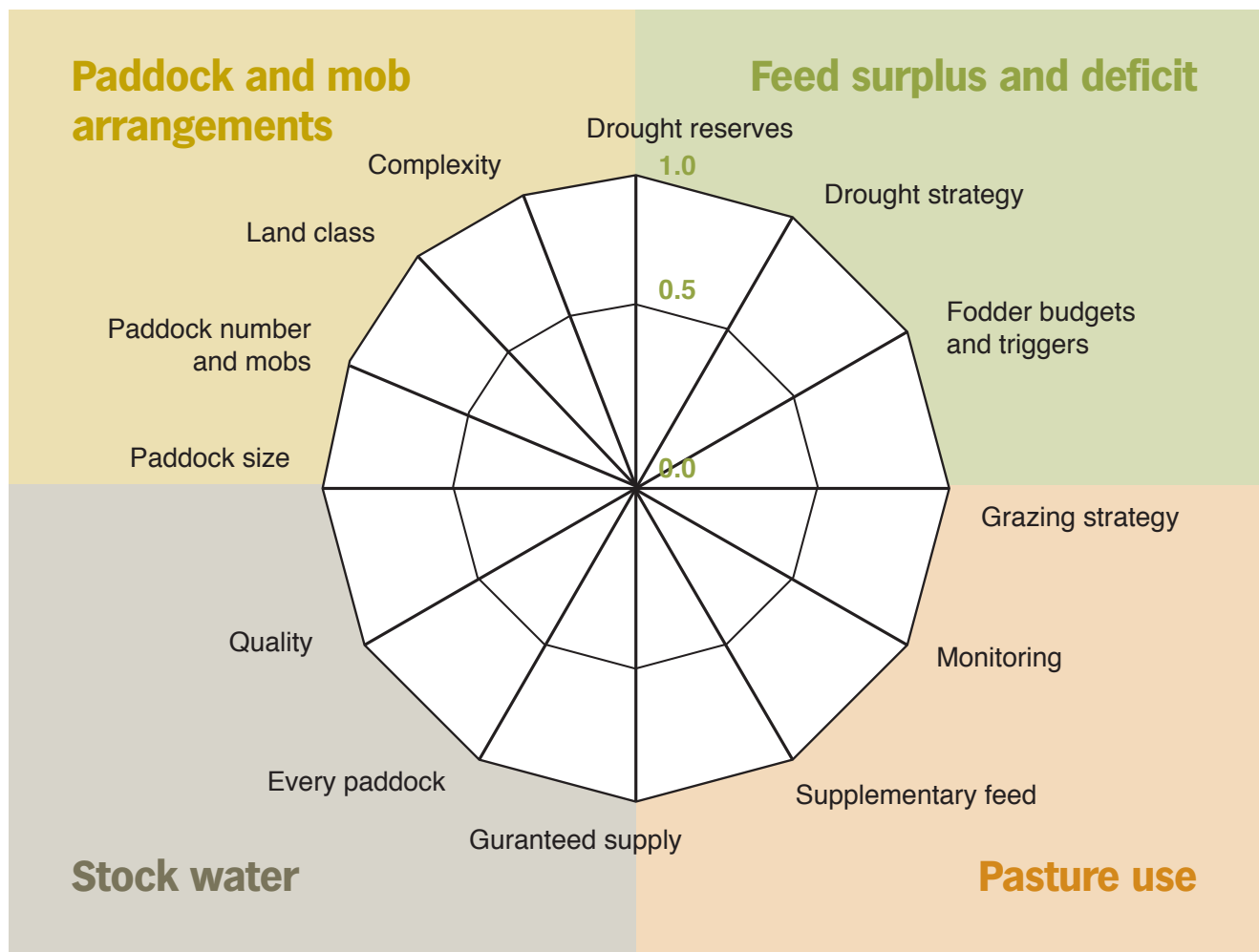
<b>Kg/head</b> — how does per head production (wool, meat) compare with industry standards?	1.0 = Well above 0.0 = Well below
<b>Kg/ha</b> — how does per hectare production (wool, meat) compare with industry standards?	1.0 = Well above 0.0 = Well below
<b>Stocking rate</b> — how does the farm stocking rate per ha compare with regional benchmarks, also considering the land capability and the risk profile of the farm? Use the <i>EverGraze stocking rate calculator</i> to calculate your stocking rate.	1.0 = Well above 0.0 = Well below
<b>\$value/Kg</b> — how does the value per kg of product compare with industry standards?	1.0 = Well above 0.0 = Well below
<b>Cost of production</b> — how does the cost of production compare to regional benchmarks (see cost of production calculators on the MLA website to calculate your cost of production)?	1.0 = Known and well below 0.0 = Not known or well above
<b>Joining length</b> — how does the joining length compare with industry standards?	1.0 = Recommended practice 0.0 = Well below
<b>Calving/lambing time</b> — how well does lambing/calving fit with feedbase, marketing, sale times?	1.0 = Well matched 0.0 = Problems
<b>Weaning time</b> — how does the time to weaning compare with industry standards?	1.0 = Recommended practice 0.0 = Well below
<b>Conception rate</b> — how do conception rates compare with industry standards?	1.0 = Well above 0.0 = Well below
<b>Weaning %</b> — how does the weaning % compare with industry standards?	1.0 = Well above 0.0 = Well below
<b>Weaner management</b> — does survival and growth rate of weaners meet regional benchmarks?	1.0 = Survival above industry standards 0.0 = Survival well below industry standards
<b>Control program</b> — is there an animal health monitoring and control program? ie use of vaccines, drench resistance, drench rotation, trace elements?	1.0 = No set plan or ad hoc implementation 0.0 = Yes, well documented and implemented plan
<b>Quarantine</b> — is there a plan to keep pest and diseases from entering the property, ie secure fencing, quarantine?	1.0 = Yes 0.0 = No
<b>Pasture issues</b> — are pasture related animal health issues (staggers, bloat, etc) an issue on the farm and how well are these issues managed?	1.0 = No or well managed 0.0 = A large problem and not well managed

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### Grazing system assessment

This graph provides a visual assessment of your current perceptions of the grazing system on your farm. Mark on each spoke of the wheel, where you currently think you sit. If you think you are doing well, you are happy with say the fodder reserves (or cash, bonds) available, put a mark close to 1.0. If you feel that this is a weakness on your farm, place the dot close to 0.5 or 0.0 depending how you feel. Once you have scored all of the points, join the dots to look for areas where there is an opportunity to improve. The table below the wheel provides a guide for how to score each element.

Grazing summary: .....



## Guide to completing the Grazing System Assessment Wheel

**1.0 = high satisfaction/good, 0.0 = low satisfaction/poor**

<b>Drought reserves</b> — have drought reserves (fodder, deposits) been determined and available?	1.0 = Calculated/available 0.0 = Not known
<b>Drought strategy</b> — is there a strategy to deal with a drought? ie. sacrifice areas, feeding system, animal priority.	1.0 = Yes 0.0 = No
<b>Fodder budgets and triggers</b> — are there trigger points for decisions to buy, sell, wean, feed, agist and destock, and are fodder budgets used to make early decisions?	1.0 = Yes 0.0 = No plan or budgets
<b>Grazing strategy</b> — is there a process for stock allocation and movement between paddocks/areas or are these decisions made on the run?	1.0 = Yes 0.0 = No
<b>Monitoring</b> — is there monitoring of feed availability, ground cover, composition, livestock condition, stocking rates per paddock, soil moisture, evenness of grazing to assist with tactical decision on where and how to graze stock?	1.0 = Yes 0.0 = No monitoring
<b>Supplementary feed</b> — how much is spent and how easy is it to supplement stock?	1.0 = Not big/efficient 0.0 = Big cost/difficult
<b>Guaranteed supply</b> — does the property have a guaranteed stock water supply even in drought?	1.0 = Yes 0.0 = No
<b>Every paddock</b> — is there water to every paddock all the time?	1.0 = Yes 0.0 = Not in all paddocks, grazing influenced by water supply
<b>Quality</b> — is the quality of water suitable for the stock being grazed?	1.0 = Quality known/adequate 0.0 = Not sure, don't know quality
<b>Paddock size</b> — are the paddocks adequate for the mob sizes used?	1.0 = Yes 0.0 = No, size often compromises grazing/pasture use
<b>Paddock number and mobs</b> — are there enough paddocks for the number of mobs on the farm?	1.0 = Yes 0.0 = No, too many mobs, not enough paddocks
<b>Land class</b> — are paddocks matched with land class?	1.0 = Yes 0.0 = No paddocks often contain several types of soil, slope etc.
<b>Complexity</b> — does complexity of the enterprise setup or pasture species across the farm restrict the ability to plan ahead, manage pastures for utilisation and/or persistence, and stay on top of the monitoring?	1.0 = Yes it is difficult to plan and manage 0.0 = No, the system is simple or it works.



### Appendix 2:

## Pasture assessment and opportunities (Examples)

Total farm area: 1800 ha

Pasture type, (land class, species, area)	Phalaris sub-clover undulating country (mostly north face) 500 ha	Native hills (north and south face) 400 ha	Lucerne creek flats 200 ha	Degraded pastures 200 ha
<b>1. Current soil fertility &amp; condition</b> (fertility, pH, structure, biological activity)	<ul style="list-style-type: none"> <li>Olsen P levels 12 ppm, K low</li> <li>Good well structured soils</li> <li>Can get waterlogged</li> </ul>	<ul style="list-style-type: none"> <li>Olsen P levels 6 ppm, all other nutrients low</li> <li>Shallow soils</li> </ul>	<ul style="list-style-type: none"> <li>Olsen P levels 15 ppm, K levels low</li> <li>Good well structured soils</li> <li>Wet in places</li> </ul>	<ul style="list-style-type: none"> <li>Olsen P levels 8 ppm</li> <li>Soils compacted</li> </ul>
<b>2. Current composition, growth, quality, performance</b>	<ul style="list-style-type: none"> <li>30% phalaris</li> <li>20% sub clover</li> <li>20% cape weed</li> <li>30% barley grass</li> <li>15 DSE/ha</li> </ul>	<ul style="list-style-type: none"> <li>South hills native and silver grass dominant and poor quality, no clover</li> <li>North hills broadleaf dominant</li> <li>2 DSE/ha, destocked for summer</li> </ul>	<ul style="list-style-type: none"> <li>Lucerne is patchy with wet areas not persisting</li> <li>Slow in winter</li> <li>Good in spring/summer</li> </ul>	<ul style="list-style-type: none"> <li>40% silver and barley grasses</li> <li>5% phalaris</li> <li>15 % sub clover</li> <li>40 % cape weed/erodium</li> </ul>
<b>3. Environmental aims &amp; limitations</b> What are the current problems or benefits?	<ul style="list-style-type: none"> <li>Autumn ground cover is a major problem</li> <li>Thistles are getting worse</li> </ul>	<ul style="list-style-type: none"> <li>Loss of ground cover on the north facing hills</li> <li>Exposure to erosion</li> </ul>	<ul style="list-style-type: none"> <li>Water logged areas full of weeds</li> </ul>	<ul style="list-style-type: none"> <li>Bare ground in summer</li> <li>Weeds are getting worse</li> </ul>
<b>4. Production aims and limitations</b> What's good, what needs to be improved?	<ul style="list-style-type: none"> <li>Highly productive in spring and early summer</li> <li>Toxicity issues in some autumns,</li> <li>Bare paddocks in autumn take a long time to get going in winter</li> </ul>	<ul style="list-style-type: none"> <li>Increase grazing on the south-facing hills</li> <li>Can't utilise south-facing hills due to bare ground on north face.</li> </ul>	<ul style="list-style-type: none"> <li>Water logged areas are unproductive</li> <li>Low winter production</li> </ul>	<ul style="list-style-type: none"> <li>Moderate winter and spring production</li> <li>Short growing season</li> <li>Not making the most of the paddocks</li> </ul>
<b>5. What is the underlying problem and its cause?</b>	<ul style="list-style-type: none"> <li>Paddocks are grazed too short in late autumn.</li> <li>Stock are allowed free access to pasture rather than set rotation or locked into confinement areas</li> </ul>	<ul style="list-style-type: none"> <li>Poor grazing management, lack of land class fencing.</li> </ul>	<ul style="list-style-type: none"> <li>Old lucerne stand</li> </ul>	<ul style="list-style-type: none"> <li>Low soil fertility</li> <li>No perennial grasses</li> </ul>
<b>6. What are potential solutions?</b>	<ul style="list-style-type: none"> <li>Change the grazing system so paddocks get a spell</li> <li>Alternate grazing with sheep and cattle rather than sheep all the time</li> </ul>	<ul style="list-style-type: none"> <li>Fence to aspect and rotationally graze</li> </ul>	<ul style="list-style-type: none"> <li>Replace with a winter active lucerne</li> <li>Sow the wet areas to chicory</li> </ul>	<ul style="list-style-type: none"> <li>Increase fertiliser applications</li> <li>Sow some of these paddocks to improved pastures suited to place and purpose</li> </ul>
<b>7. Priority for improvement/change in management</b>	<ul style="list-style-type: none"> <li>High priority</li> <li>High return for effort</li> </ul>	<ul style="list-style-type: none"> <li>Medium priority</li> </ul>	<ul style="list-style-type: none"> <li>High priority as summer feed very valuable</li> </ul>	<ul style="list-style-type: none"> <li>Medium priority</li> </ul>

# Exchange

## Appendix 3a:

# Livestock performance assessment and opportunities (Examples)

## Enterprise: winter lambing self-replacing merinos

Female mature weight: 55 kg No Head: 4000 merino ewes Lamb/calve: August Weaning: December Shearing: February Selling date: end February	Benchmark performance for your region	Actual performance achieved	Rating for performance  Compare with district/ regional benchmarks to provide objective ratings  1.0 = good, 0.0 = poor	What; Needs to be addressed to improve the performance of these livestock?	How; Management strategies or changes to overcome limitations
<b>Stocking rate</b>	2 DSE/100 mm rainfall	12 DSE/ha	0.9	<ul style="list-style-type: none"> <li>Winter feed availability</li> </ul>	<ul style="list-style-type: none"> <li>Use something to boost growth in winter</li> <li>Sow more winter active perennial pastures</li> </ul>
<b>Reproductive performance</b> (weaning %)	90%	75-85%	0.8	<ul style="list-style-type: none"> <li>Lamb survival (shelter)</li> <li>Mis-mothering</li> <li>Ewe condition at joining</li> <li>Ovulation rate</li> </ul>	<ul style="list-style-type: none"> <li>Lamb in shelter</li> <li>Set stock for lambing</li> <li>Graze high quality feed</li> <li>Get ewes to CS 3 for joining</li> </ul>
<b>Growth rate/turnoff weights/age</b>	22 kg	Average weaning weight 18 kg	0.8	<ul style="list-style-type: none"> <li>Feed quality in late spring is not good enough for lactating ewes</li> </ul>	<ul style="list-style-type: none"> <li>Soil fertiliser, trace elements, clover cultivars</li> </ul>
<b>Wool production per head</b>	5.0 kg	5.0 kg	0.4	<ul style="list-style-type: none"> <li>Seems a bit low compared to other farms but not critical?</li> </ul>	<ul style="list-style-type: none"> <li>Select better Merino rams</li> </ul>
<b>Wool quality</b>	Low VM and high strength	High veg content	0.5	<ul style="list-style-type: none"> <li>Barley grass seed reduces wool value</li> </ul>	<ul style="list-style-type: none"> <li>More phalaris and clover</li> </ul>
<b>Supplementary feeding costs</b>	\$2.00/DSE	\$3.50/DSE	0.1	<ul style="list-style-type: none"> <li>Autumn feed availability in poor seasons</li> </ul>	<ul style="list-style-type: none"> <li>More growth in winter, will also get over SR problem</li> <li>Move to spring lambing</li> </ul>
<b>Labour efficiency</b> (DSE/labour unit)	1 person per 10,000 DSE	1 labour unit	1.0	<ul style="list-style-type: none"> <li>Seems a like a reasonable balance of labor for stock</li> </ul>	<ul style="list-style-type: none"> <li>Look at why so much time is wasted going around lambing ewes, use scanning to have early and late mobs, shorter joining length?</li> </ul>
<b>Animal health</b> (limitations, concerns, prevention)	2 drenches per year	Worms a constant problem	0.5	<ul style="list-style-type: none"> <li>Ewes resistant to worms</li> </ul>	<ul style="list-style-type: none"> <li>Select different rams with high FEC.</li> </ul>

## Exchange

### **Risks with the livestock enterprise** (ie. Disease issues, poor seasons, prices)

High supplementary feeding costs and mis-mothering due to feeding lambing ewes in winter.

### **Labour and/or Lifestyle issues** (ie. Availability of labour, timing of operations, specialist skills, limitations of infrastructure)

No fun feeding sheep in the wet and cold.

No fun drenching wormy sheep all the time.

### **Summary** What is the greatest limitation/area of improvement for the animal enterprise?

- Better match pasture availability to demand by lambing later
- Reduce the stress and the worm burden by lambing later
- Buy better rams
- Sow down more phalaris pastures.

# Exchange

## Appendix 3b:

# Livestock performance assessment and opportunities (Examples)

## Enterprise: spring-calving Angus cows

Female mature weight: 550 kg No Head: 400 cows Lamb/calve: August–Sept Weaning: March Selling date: November 15 months	Benchmark performance for your region	Actual performance achieved	Rating for performance  Compare with district/ regional benchmarks to provide objective ratings 1.0 = good, 0.0 = poor	What; Needs to be addressed to improve the performance of these livestock?	How; Management strategies or changes to overcome limitations
<b>Stocking rate</b>	2 DSE/100 mm rainfall	12 DSE/ha	0.8	<ul style="list-style-type: none"> <li>Winter feed availability</li> </ul>	<ul style="list-style-type: none"> <li>Use something to boost growth in winter</li> </ul>
<b>Reproductive performance</b> (weaning %)	90%	85%	0.4	<ul style="list-style-type: none"> <li>Cow condition at joining</li> <li>Ovulation rate</li> </ul>	<ul style="list-style-type: none"> <li>Graze high quality feed</li> <li>Get cows to CS 3 for joining</li> </ul>
<b>Growth rate/turnoff weights/age</b>	Average growth birth-weaning 0.8 kg/day	Average weaning weight 200 kg	0.3	<ul style="list-style-type: none"> <li>Feed quality in late spring is not good enough for lactating cows</li> </ul>	<ul style="list-style-type: none"> <li>Soil fertiliser, trace elements, clover cultivars</li> </ul>
<b>Supplementary feeding costs</b>	\$2.00/DSE	\$2.50/DSE	0.6	<ul style="list-style-type: none"> <li>Autumn feed availability in poor seasons</li> </ul>	<ul style="list-style-type: none"> <li>More pasture growth in winter, will also get over SR problem</li> </ul>
<b>Labour efficiency</b> (DSE/labour unit)	1 person per 10,000 DSE	1 labour unit	0.8	<ul style="list-style-type: none"> <li>Slightly too much labour for the number of cattle, needs to be reduced.</li> </ul>	<ul style="list-style-type: none"> <li>Look at why so much time is wasted going around calving cows use scanning to have early and late mobs, shorter joining length?</li> </ul>
<b>Animal health</b> (limitations, concerns, prevention)	Drench only young cows Less than 5% of herd	Milk fever a problem, lost 10 cows last year	0.5	<ul style="list-style-type: none"> <li>Restrict green feed 1 to 2 weeks pre calving</li> </ul>	<ul style="list-style-type: none"> <li>Run the cows in paddocks that contain lots of roughage before calving</li> <li>Feed them cereal hay during calving</li> </ul>

## Risks with the livestock enterprise (ie. Disease issues, poor seasons, prices)

Over-stocked for the current feedbase. This is reducing reproduction and growth rates and increasing feed costs. The thin cows require more drenching.

## Labour and/or Lifestyle issues (ie. Availability of labour, timing of operations, specialist skills, limitations of infrastructure)

No fun feeding and drenching poor cows.

## Summary What is the greatest limitation/area of improvement for the animal enterprise?

Increase fertiliser applications and sow down more land to improved pastures to better match pasture production to the demands of the herd.



## Exchange

### Appendix 4:

## Financial and intangible impacts assessment of changes to livestock and grazing systems

\$\$ impacts can be assessed with the Pasture Improvement Calculator, Gross Margin analysis or similar objective assessment.

Intangible/personal impacts are scored as:

**1.0 (high positive impact), 0.5 (no positive or negative impact) 0.0 = significant negative impact.**

	Estimated impact of change on:										
Livestock, pasture or management change	Financial issues	Intangible or personal issues									
	\$\$ or production benefit	Stress Will the change cause me to lose sleep?	Need for capital? High or low?	Risk Will this increase or decrease?	Environmental issues on-farm Will improve or make it worse?	Environmental issues off-farm Will improve or make it worse?	Lifestyle Will improve or make it worse?	OH&S issues Any issues?	Complexity Is the new system simpler or more complex?	Property value Will improve or reduce value?	Labour More or less labour required, timing of labour?
<b>Adding 3 paddocks of lucerne</b>	ROI = 45% Breakeven = 7 years Max debt = \$40,000	<b>0.9</b> Will I be happy as know I have high quality feed for young sheep	<b>0.3</b> Need \$\$ for lime, preparation, sowing etc and will take a while to recoup	<b>0.8</b> Will improve survival of young stock	<b>0.7</b> Use soil water and so over time reduce waterlogging on the farm	<b>0.5</b> Unclear if any impact off farm	<b>0.7</b> Will not have to feed weaner sheep every day	<b>0.5</b> No impact	<b>0.4</b> New system will take a while to learn but do not perceive any problems	<b>0.8</b> Having some green feed in summer will improve the look of the farm	<b>0.7</b> Less labour needed over summer and easier to get away
<b>Changing lambing time to July and increasing stocking rate</b>	ROI = 30% Breakeven = 5 years Max debt = \$20,000	<b>0.3</b> I am worried about lambing in July though it will increase profits	<b>0.4</b> Need to reduce sales of surplus sheep to increase SR	<b>0.5</b> Lower risk with ewes in autumn but issues over summer	<b>0.6</b> Less pressure on pastures in autumn so less bare ground	<b>0.6</b> Reduction in bare ground might improve water runoff quality	<b>0.7</b> Much less stress in autumn with pregnant ewes	<b>0.5</b> No impact	<b>0.6</b> winter lambing should be easier as less risk of metabolic disease	<b>0.6</b> Pasture will not be grazed as hard in autumn so will last longer	<b>0.7</b> Less labour and time required to feed ewes in autumn
<b>Change from running cows and calves to growing out steers for feedlot</b>	Gross Margin steers \$250/ha Current Gross Margin cows/calves \$300/ha	<b>0.9</b> Will not have to worry about calving, autumn feeding etc	<b>0.8</b> Sale of cows will free up capital and so allow debt reduction	<b>0.6</b> No significant change as links to feedlot and breeder	<b>0.5</b> No impact	<b>0.5</b> No impact	<b>0.9</b> Will make it much easier to get away from the farm.	<b>0.6</b> No bulls will make life easier	<b>0.8</b> Simple system, steers come in April and sold following spring, hay contracted out	<b>0.5</b> No change	<b>0.8</b> Less labour required on the farm will allow more time for off-farm work.

### Which of the changes best meets the needs of the farm business?

#### Summary of the change to be made and justification:

Adding three paddocks of lucerne will reduce stress and the risk of losing young stock, improve water use, save labour (improving lifestyle) and improve property value. Changing from cows and calves to steers may free up enough capital for purchase of lime and sowing costs, and will improve lifestyle which is a big objective, despite having slightly lower gross margins.

#### What other changes need to be made to maximise the benefits?

May need to reconsider lambing later further down the track to increase ewe numbers and justify sowing the lucerne. Additional electric fences are required to manage grazing of the lucerne.

### Appendix 5:

## Summary of strategic changes

**Grazing summary:** ..... **Farmer Joe:** .....

### Summarise where I am at now

Briefly describe the pasture, livestock and grazing systems.

- Running a winter lambing merino flock with older ewes joined to terminal sires.
- Property is based on ryegrass pastures with average of about 30–50 ha paddocks, mainly set stocked. Ryegrass declines within 5–8 years.
- Conception rates and lamb survival are not as good as other farms (85% weaning vs. 100%)
- Managing young stock over summer is difficult with ryegrass staggers in some years.

### Where and when do I want to get to?

Briefly describe what you want to achieve, the production system you would like to have, production level and dates to achieve results.

By 2015, I want to have achieved;

- 10% of farm sown to summer active lucerne
- Graze weaners on green low endophyte pasture to eliminate staggers and increase growth rates minimum of 50 g/d over summer
- Increase weaning % to 100% across the farm through better management of ewes and using green feed prior to joining.

By 2017;

- To have introduced a simple rotational grazing system to enhance persistence of ryegrass.

### First steps

To achieve my targets I need to;

- Winter 2012; select 4 paddocks suitable for lucerne establishment in next 3 years, apply lime and seek advice on cultivars and management
- Summer 2012–13; implement a slow rotation on ryegrass paddocks with long rest for 1–2 selected paddocks to encourage recruitment
- Spring 2013; sow 2 lucerne paddocks
- Summer autumn 2013–14; use lucerne to tactically graze ewes and weaners.

### How will I know if I have achieved my aims?

Key things to measure are;

- Soil fertility to ensure low P is not causing pasture decline
- Proportion of weaners with staggers each year
- Scanning, lambing and marking percentage
- Supplementary feed costs
- Cost and establishment time(loss of grazing) for lucerne pastures
- Overall farm stocking rate, must be able to run more stock and achieve higher production per head.