

Module 2 - Financial analysis

What to do?

To ensure the profitability and long-term survival of your business, you need to be able to assess the financial position of the business, and analyse the financial impact of any enterprise changes.

The critical aspects of financial analysis are:

- Enterprise gross margins
- Return on investment
- Cashflow budgeting
- Valuing secondary benefits
- Risk management strategies

How to do it?

Financial analysis is a specialised area. The information provided in this module is only a basic introduction to the subject. It is important that you seek further advice from a financial adviser (with an understanding of agricultural industries), an accountant or agricultural adviser (with good skills in financial analysis).

What sort of information do you need?

Returns = income from the enterprise
 = \$/unit of product sold x number of units sold.

For example: cents/kg x kg hot standard carcase weight (HSCW)

Costs fall into three categories: variable costs, overhead costs, capital costs.

Variable costs = costs directly associated with production from an enterprise, eg animal health costs, fuel, fodder production costs, supplementary feeding costs, breeding costs. For more examples of variable costs refer to *Module 2 - Financial analysis Toolkit 2*

page 4. These costs vary according to the size of the activity.^{6,7}

Overhead costs = Fixed costs of running a business, eg rates, general insurance, electricity, accountancy. Again, for more examples of overhead costs refer to the *Module 2 - Financial analysis Toolkit 2* page 4. These costs do not vary significantly even though the level of farming activity on the property may change.⁸

Capital costs = The value of the resources on which the business bases its operation eg land, equipment, livestock. These tend to be infrequent purchases.

Tools of analysis

Some of the commonly used tools of financial analysis include:

- Gross margins
- Return on investment
- Budgeting
- Cost of production
- Benchmarking

Which tools you choose to use will be dependent on your business situation and your level of financial competency. If you have difficulty working with figures, it would be wise to seek the assistance of professionals in the financial field. The professional will be able to give you a meaningful analysis provided you are able to present accurate and current physical and financial data. *Module 2 - Financial analysis Toolkit 2* page 4 provides a checklist of the type of information required for financial analysis.

The following section outlines a range of business situations and makes some suggestions about the sorts of analyses that may be appropriate.

⁶ Simmonds, J., Davies, L. and Glastonbury, D. (2001). Economic Selection of Enterprises. In: "Australian Goat Notes", K1, pp 261-265. Australian Cashmere Growers Association.

⁷ Makeham, J.P. and Malcolm, L.R. (1993). *The Farming Game Now*. Cambridge University Press, Melbourne.

⁸ Makeham, J.P. and Malcolm, L.R. (1993). *The Farming Game Now*. Cambridge University Press, Melbourne.

It should be noted that calculation methods may vary slightly between information sources. The key is to be consistent with the type of calculation method that you use and always compare figures that have been calculated using the same methodology.

Note: when undertaking financial analysis, it is vital that the figures used are realistic estimates of costs and returns. It may be valuable to run and compare the calculations for a range of scenarios: best case, average, worst case.

A. Buying a goat-farming business

This is a big step. You should definitely seek the assistance of a financial adviser to assist you in analysing the economic potential of the proposed business venture.

Prior to meeting with the adviser you need to have collected the following information:

- Projected stock numbers and level of product turn-off per year.
- Projected costs: annual variable and overhead costs.
- Projected returns: income from sale of product (units sold x \$/unit).

- Capital investments: cost of purchasing property, plant and livestock, and the cost of any infrastructure changes that may be required.

Annual figures for costs and returns are a good start. Ideally these should be broken down into monthly estimates to give you an appreciation of the pattern of cash flow.

Obtaining accurate estimates of costs and returns will require thorough research. *Module 2 - Financial analysis Toolkit 2 page 4* can assist you in this process. In other agricultural businesses you would refer to industry benchmarking data, which could provide you with information about typical costs and returns. However, in the goat industry, such enterprise benchmarking information is not currently available.

Potentially useful sources of information include talking to other farmers with similar production systems, documented case-studies of similar enterprises, market reporting services, such as *Meat & Livestock Australia Market Reporting Service*, *The Australian Goat Report* and professional advisers.



B. Changing the operation of an existing farm business to include a goat enterprise.

Enterprise gross margins

Gross margins are used for initial comparisons between different enterprises.⁹

The gross margin for a particular enterprise is the income generated by the enterprise less variable costs. For livestock enterprises, the gross margin should also take into account any changes in livestock inventory.¹⁰

Comparing enterprises based on gross margins does not take into account any differences in enterprise establishment costs.¹¹

$$\text{Gross margin} = \text{value of enterprise output*} - \text{variable costs}$$

*Value of enterprise output includes:

- Income from sales minus cost of any stock purchases; plus
- Value of changes in livestock inventory

$$= (\text{closing stock number} - \text{opening stock number}) \times \text{per head market value of stock.}^{12}$$

Gross margins can be expressed in a variety of ways: per hectare, per dry sheep equivalent (dse), per doe or per \$100 invested in livestock capital. Gross margins should always be expressed in terms of the most limiting resource.¹³

An example of a gross-margin calculation is provided in *Module 2 - Financial analysis Toolkit 2 page 7*.

Module 2 - Financial analysis Toolkit 2 page 13 provides a summary of an enterprise profitability study undertaken by a group of southern Queensland goat producers, using gross-margin analysis.

Return on capital

Most major enterprise changes will incur significant set up costs, and require an injection of capital to get the enterprise established. Therefore it is important to consider the rate of return that the new enterprise will provide for the amount of capital invested, and compare that figure with rates of return offered by alternative investment opportunities.

$$\text{Return on capital} = (\text{operating profit} / \text{capital investment}) \times 100$$

To calculate operating profit you need to have the following information:

- A. Gross income
- B. Variable costs
- C. Total gross margin (A – B)
- D. Total overhead costs

$$\text{Operating profit before tax} = C - D$$

Return on capital can be assessed in terms of the total capital invested in the business, or, as in the case of looking at new enterprises, the extra capital invested in the new enterprise.

⁹ Hacker, R., Clipperton, S. and Melville, G. (2000). West 2000 Plus – role of goat production as a range restoring alternative enterprise. Final Report. New South Wales Department of Primary Industries.

¹⁰ Millear, G., Conway, A. and Mills, T. (2003). Calculating a gross margin for sheep, goat and cattle enterprises. Queensland Department of Primary Industries and Fisheries. (www.dpi.qld.gov.au).

¹¹ Simmonds, J., Davies, L. and Glastonbury, D. (2001). Economic Selection of Enterprises. Australian Goat Notes, K1. Australian Cashmere Growers Association.

¹² Millear, G., Conway, A. and Mills, T. (2003). Calculating a gross margin for sheep, goat and cattle enterprises. Queensland Department of Primary Industries and Fisheries. (www.dpi.qld.gov.au).

¹³ Simmonds, J., Davies, L. and Glastonbury, D. (2001). Economic Selection of Enterprises. Australian Goat Notes, K1. Australian Cashmere Growers Association.

To look at the impact of incorporating a new enterprise into an existing farm business, where the change is relatively straightforward, you can use a partial budget to help you. The calculation methodology is as follows:

Partial budget:¹⁴

Costs and losses as a result of incorporating the new enterprise (-)	Gains and savings as a result of incorporating the new enterprise (+)
A. Returns from the original business that have been forgone as a result of the change.	E. Returns from new enterprise
B. Variable costs of the new enterprise	F. Variable costs from original business that have been avoided as a result of the change.
C. Overhead costs of the new enterprise	G. Overhead costs from original business that have been avoided as a result of the change.
D. Total costs and losses associated with the new enterprise = $A + B + C$	H. Total gain associated with the new enterprise = $E + F + G$
	I. Overall gain from new enterprise = $H - D$
J. Extra tax incurred with the new enterprise = marginal tax rate x extra taxable income (may be different from E)	
	K. Gain from new enterprise after tax = $I - J$
L. Capital required for set up of new enterprise (eg purchase of stock, infrastructure, extra land)	M. Any capital released from original business as result of the change (eg sale of infrastructure or stock that are no longer required)
N. Net capital investment in new enterprise = $L - M$	
	O. % Return on extra capital invested = $(K/N) \times 100$

An example of a partial budget calculation is provided in *Module 2 - Financial analysis Toolkit 2 page 9*.

Return on extra capital invested should be compared with the rates of return offered by other potential investments (these could be on-farm or off-farm investments). If the return on capital is favourable, the next step would be to complete a cashflow budget, showing monthly costs and income.

When assessing the rate of return from a new enterprise always allow a margin for risk management.

If the enterprise change is more complex and dramatically changes the farm business, then it would be advisable to undertake a complete budget for both the existing business operation and the new operation, and compare the two.

¹⁴ Information used to compile this table was sourced from: Makeham, J.P. and Malcolm, L.R. (1993). *The Farming Game Now*. Cambridge University Press, Melbourne.

C. Existing goat producer, seeking to improve performance of his/her farm business.

To analyse the performance of an existing business, the basic tools described above can also be used.

If you have multiple enterprises, you could use *gross margins* to compare the performance of the different activities.

You may also want to calculate the *return on capital* that the business is generating.

Cost of production

Cost of production is another tool that you may find useful. Cost of production is the sum of all costs associated with producing and selling your product.¹⁵

$$\text{Cost of production} = \text{variable costs} + \text{overhead costs}$$

Module 2 - Financial analysis Toolkit 2 page 4 provides a comprehensive list of the items that fall into each of the cost categories.

If you have a mixed enterprise business you will need to apportion a percentage of the overhead costs to each enterprise. This can be done based on the number of dry sheep equivalents (dse) represented by each enterprise. For example, if 30% of the total dse of the property is made up by goats, then 30% of the overhead costs should be attributed to the goat enterprise.

For a goatmeat enterprise, cost of production is usually expressed in terms of dollars per kilogram of meat produced ie divide the total cost of production by the number of kilograms of goatmeat produced.

You can take this one step further by adding finance and tax costs to the cost-of-production figure to determine a break-even price¹⁶ for your product.

Benchmarking

Benchmarking your business performance is also something that may be of benefit. Benchmarking is about making comparisons between performance figures, these can be physical, financial or both.

Benchmarking can be undertaken internally or externally. Internal benchmarking is about annual monitoring and comparison across years. This will help you to see how the business is progressing over time. Are your figures improving? Is the business achieving its targets? The important things are to understand the trends and identify the impacts of management changes.

External benchmarking involves comparing your business performance figures with those of similar businesses.

To set up an external benchmarking activity you need to do the following:

1. Assemble a group of like-minded farmers.
2. Decide on the sorts of information that the group is going to collect and analyse.
3. Each member of the group collects the necessary information for their property.
4. Information is pooled and analysed.
5. As a group, review the data and compare figures.

The real value of such exercises comes from the discussion between producers about how different performance levels are achieved. The focus should be on learning from each other's experiences.

Unlike many of the other major agricultural industries, there are few formal opportunities for goat producers to participate in industry-specific benchmarking programs.

¹⁵ Rural Industries Skill Training (2003). Taking Control of Beef Prices. Course notes.

¹⁶ Rural Industries Skill Training (2003). Taking Control of Beef Prices. Course notes.

However, there is a range of financial analysis software packages on the market that can help you to analyse your business. Talk to your accountant or financial adviser about which packages would be most appropriate for your business.

There are lots of figures that you can collect and monitor. With pages of facts and figures the exercise can quickly result in confusion. The key to successful benchmarking is to identify and concentrate on those factors which have the most impact on your business outcomes.

Module 2 - Financial analysis Toolkit 2 page 12 provides an example of some of the benchmarking data that has come out of the BizCheck™ program. The figures in this tool relate to intensive red-meat enterprises.

Valuing secondary benefits

If you are considering incorporating a goat enterprise into your farm business the emphasis will no doubt be on the primary benefits that the enterprise offers, ie the quantity and value of the product produced. However, there are often secondary benefits that also warrant consideration. In the case of a goat enterprise, such benefits might include weed control (including woody weeds) and changes to botanical composition of the fodder base.

With their broad eating habits, goats can often be used as an efficient means of controlling weeds. A reduced weed burden on your property is a definite benefit. The use of goats for weed control may reduce the need to use alternative control methods, such as chemicals or machinery, thus presenting a significant cost saving.

One cautionary note: be realistic in your expectations of the goats' role in such activities. Consider the feed value of the weeds and the goats' feed requirements.

To maximise production, goats need good nutrition. Ensure that their use in weed-control strategies is well managed, and that production does not suffer as a result of inadequate nutrition. *Module 2 - Financial analysis Toolkit 2 page 10* provides a simple example of how to undertake a partial budget to assess the value of using goats to control weeds.



Bathurst Burr on a contour bank heavily grazed by goats.

In a mixed livestock enterprise, goats may complement the grazing habits of other stock. For example, sheep show a much greater preference for clover than goats. As a result, heavily grazed sheep pasture may lack clover. Replacing some of the sheep with goats will reduce the grazing pressure on the clover, which can enhance the overall clover content of the pasture. With improved clover content, the feed value of the pasture improves, providing the sheep with a higher-quality diet.

Risk management

There are many factors that can threaten the performance of your business. It is important that you identify these threats and have risk management strategies in place to minimise their negative impacts.

Module 1 – Property planning talks about undertaking an analysis of your business's strengths, weakness, opportunities and threats – a SWOT analysis. This process can help you to identify potential threats to your business and develop strategies to deal with these threats.

Some examples of potential threats may include poor seasonal conditions, drought, fire, downturn in market prices, illness or injury to management or staff, stock diseases, parasites and predators.

It is critical that such scenarios are taken into consideration when managing your finances. There will be costs involved and these should be factored into the budgeting process.

Be realistic in the figures that you use for budgeting and financial analysis. Run a range of scenarios: best case, average year, worst case; so that you are fully aware of the business implications of various situations and cater for this in your planning.

In the paragraphs that follow we will briefly look at some of the potential threats that you may face and suggest some appropriate risk-management strategies.

- Diseases:
 - Refer to the '*Biological threats to your farm*' section in *Module 6 – Husbandry*.
- Down turn in prices:
 - In predicting the impact of, and addressing a downturn in prices, it is important to know your cost of production. Refer to the section on cost of production earlier in this module for an explanation of how to calculate this figure.

- Diversification of income sources can help to reduce the impact of a fall in price in a particular market. This can be a range of different enterprises and/or market opportunities.
- Make use of forward contracts which negotiate a price well in advance of supply, thus ensuring that you are working toward an agreed price, rather than subject to weekly price fluctuations. Note: this may be a disadvantage if prices rise.
- Poor seasonal conditions:
 - Develop a drought plan for your property – forward planning is critical. It is often more costly if you wait until a crisis hits before taking action. Have a strategy in place that you can activate if weather conditions move toward a drought. Your plan should include strategies for managing stocking rate, purchasing and feeding supplements, accessing stock water, fodder conservation, protecting soils, preserving plant species, managing finances and minimising stress. When developing your plan, you may find it beneficial to talk to other producers who have experienced droughts or advisers with relevant experience. Useful references on drought management can be found in *Module 2 - Financial analysis Toolkit 2 page 2*.
 - Fall-back opportunities – understand the range of marketing opportunities available to you, and have a back-up plan should stock growth rates fall below the targets required to meet a specific market specification. In such cases, the first thing to do is to look at strategies to lift current

growth rates, eg use techniques that will boost pasture production (fertiliser, grazing management), reduce stock numbers and/or supplementary feed. Carefully consider the cost and practicality of each option. Compare this to the costs and returns associated with carrying the stock over to supply a different market. A range of fall-back marketing options are outlined in *Module 2 - Financial analysis Toolkit 2 page 11*. You need to be aware that prices tend to decline in accordance with increasing age and weight.

- Injury or illness:
 - o Document your plans and farm management strategies. If something happens to you, say unexpected illness or accident, will others be able to step in and take over the management? If there is documentation to guide them this can help to ensure that the business continues to function effectively.

- o Occupational Health and Safety. Analyse the day-to-day operations of your property and identify potential threats to health and safety. Having assessed the level of risk, develop control strategies. Ideally eliminate the risk. If this is not possible, aim to reduce the risk:
 - Substitute with less hazardous plant or processes
 - Use engineering controls
 - Isolate the hazard
 - Use administrative controls
 - Use protective clothing and equipment



Toolkit 2 - Financial analysis

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Tool 2.2 Check list of financial data and physical figures required for a business analysis (page 4)

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Tool 2.7 BizCheck®, benchmarks for meat enterprises – intensive enterprises (page 12)

Tool 2.8 Profitability of an extensive goatmeat enterprise (page 13)

Tool 2.1

Finding further information

Useful contacts

Banking sector – agribusiness managers.
Rural advisers and consultants.
Accounting firms experienced in dealing with rural businesses.
Livestock firms' financial planners.

References

Are goats worthwhile? How to decide, using a partial budget. Davies, L. 1991. Agfact A 7.1.7.

Integrating goats for a sustainable systems. May, T. 1995. NSW Agriculture, Orange.

Budget templates (Farm Forms). Scott, F. 2000. NSW Department of Primary Industry. Agnote DPI-227. Second edition.

Financial Analysis of New and Emerging Rural Enterprises. Evaluating enterprise change and capital investments: partial and break-even budget. Patton, D.A. 2001. New South Wales Agriculture, Trangie. Agfact M1.2. Second edition.

Investigating Emerging Industries for the Central West of NSW. Henry, E. 2001. The University of Sydney, Orange.

Drought management references:

Managing Drought. Mackay, B. 2002. New South Wales Agriculture. Third edition.

New South Wales Department of Primary Industries, Agriculture has a series of useful publications on the topic of drought management. Many of these can be accessed via their website www.agric.nsw.gov.au or the NSW Department of Primary Industries bookshop phone 1800 023 374 (toll free call).

Nutrition of goats during drought. McGregor, B. 2003. Rural Industries Research and Development Corporation.

Nutrition and management of goats in drought: a report for the Rural Industries Research and Development Corporation. McGregor, B. 2005. Rural Industries Research and Development Corporation.

Courses and workshops

GrazingforProfit™ Training School – business school for grazing industry. Resource Consulting Services (RCS), Sandgate Queensland. www.rcs.au.com

BizCheck® for Meat – EDGEnetwork™ financial benchmarking training course. To find your state contacts for EDGEnetwork™ contact Meat & Livestock Australia.

Websites

Refer to *Module 1 – Property planning Toolkit 1 page 5* for instructions on how to conduct an effective web search.

Department of Primary Industries, Victoria: www.dpi.vic.gov.au Search for South West Monitor Farm Project. This web page provides detailed financial figures relevant to sheep and beef enterprises in south western Victoria.

NSW Department of Primary Industry www.dpi.nsw.gov.au/agriculture

Primary Industries and Resources South Australia www.pir.sa.gov.au

Department of Agriculture Western Australia www.agric.wa.gov.au

Queensland Department of Primary Industry and Fisheries www.dpi.qld.gov.au

Meat & Livestock Australia www.mla.com.au

Tools in development – things to look out for

Hassall & Associates. Dairy goat analysis – Excel spread sheet.

Rural Industries Research Development Corporation (RIRDC). RIRDC Project OSE-1A. Assessing Management Strategies and Financial Performance of Angora Goats and the Production of Mohair and Meat. A computer program that assists in enterprise production and financial modeling. For more information contact RIRDC at www.rirdc.gov.au or phone 02 6272 4819.

Meat & Livestock Australia PIRD report G2001/Q14. South Queensland Goatmeat Producers Group – a gross-margin analysis tool, developed with the cooperation of the South Queensland Goatmeat Producers Group. This report is available from Meat & Livestock Australia. A summary of this report is provided in *Module 2 - Financial analysis Toolkit 2 page 13*.

New tools

Enterprise Comparison Calculator – a spreadsheet for comparing the economic and financial returns of goat, Damara, merino and cattle enterprises on pastoral stations in Western Australia. This program has been designed to assist producers who are considering changing enterprises on their properties. To access this spreadsheet, contact the Department of Agriculture Western Australia, Rangelands Program.

Tool 2.2

Checklist of financial data and physical figures that you need to collect to assist in discussions with your adviser, accountant or bank manager.

Please note the items in the lists that follow are in no particular order.

In some circumstances, entries may appear in two sections. For example in a fibre enterprise, part of the electricity bill may be considered a variable cost when associated with shearing, and part an overhead cost when supplying the office. Your adviser will be able to assist in the decisions about what to include where.

Variable costs

- Animal health and husbandry – drench, vaccination, veterinary costs, identification tags, contracted husbandry activities (eg marking).
- Bought in supplementary feed – hay, grain, pellets, silage.
- Fodder conservation – silage wrap, baling twine, contract labour and equipment.
- Fertiliser.
- Pasture seed.
- Herbicides.
- Pesticides.
- Transport.
- Commissions, levies, agents' fees.
- Machinery running costs – repairs, fuel, oil, servicing.
- Shearing costs – electricity, shearing contractors, servicing plant, repairs to plant.

- Dairy costs – electricity, detergents, rubberware, servicing plant, repairs to plant.
- Livestock and crop insurance.
- Irrigation running costs.
- Casual/contract labour.
- Irrigation sales/tradeable water.
- Livestock trading – replacement stock.
- Agistment.
- Vermin control.
- Sundries.

If you do not know the actual figures for an enterprise, you can make an estimate by working out the quantity (number of units) required multiplied by the unit cost of the product or service.

For example, drench cost: \$/dose x number of doses. Your agricultural produce supplier will be able to provide a cost per dose. You will be able to determine the number of doses required by calculating the number of stock to be drenched, multiplied by the number of drenches required per year. If you are unsure about drench requirements refer to *Module 6 – Husbandry* for more information.

Often the local department of agriculture or primary industries will be able to provide some general figures on enterprise costs.

Overhead costs

- Repairs and maintenance to water supply, tracks, buildings, fences, yards.
- General insurance – WorkCover, insurance of plant and fixed structures.
- Electricity.
- Administration costs – accountant, bookkeeper, office costs, stationery, bank fees.

- Shire rates.
- Permanent workers' wages and associated costs.
- Depreciation of plant and improvements.
- Consultants' fees.
- Manager's/operator's allowance.
- Running costs of general farm vehicles, eg farm ute, motorbike.
- Water – in irrigation areas water right/permanent water allocation would be classed as a capital cost.
- Interest.
- Lease payments.
- Rent.

Overhead costs are often similar across rural enterprises, so you could make estimates based on figures from similarly sized or located enterprises, not necessarily goat-specific. An accountant or financial adviser would certainly be able to help out with some of these figures, based on the averages that they see across a range of clients. For items like rates, contact the local Shire for an estimate. For insurance costs, contact an insurance agent or broker for a quote.

Capital invested

- Value of land.
- Value of livestock.
- Value of plant and machinery.
- Off-farm investment.

Income

- Number of goats sold and price received per head, or quantity of product sold and price received per unit.

- Do not forget to include cull sales: number of culls sold and price received per head.
- Off-farm income eg contracting work or partner's income.

Price estimates can be obtained from local processors and buyers (a list of useful contacts is provided in *Module 8 – Marketing*), the livestock report on the Meat & Livestock Australia website and publications such as the *Australian Goat Report* which has fortnightly price updates.

Other items to consider

- Finance costs – principal repayments and other debt servicing commitments (eg credit cards).
- Taxation.
- Property development.
- Surplus funds (eg funds available for off-farm investment, holidays, etc).
- Lease commitments – eg car lease.

Production figures

- Livestock inventory – number of goats in each livestock class at the start of the financial year, versus number of goats in each class at the end of the year.
- Fodder inventory – quantity of stored fodder (hay, silage, grain) at the start of the financial year, versus the quantity at the end of the year.
- Number of goats turned off each year and/or quantity of product sold each year.
- Quality of product sold each year – product specifications (condition score targets, liveweight targets, fibre micron, milk solids).

- ❑ Stocking rate.
- ❑ Timing of product sales.

The figures that you collect can be used to analyse the financial merit of your business proposals. These figures will enable the calculation of cost of production, partial budgets and gross margins.

Tool 2.3

Example of a gross margin calculation

Gross margin = value of enterprise output* – variable costs

*Value of enterprise output includes:

- Income from sales minus cost of any stock purchases;
- Plus value of changes in livestock inventory

= (closing stock number – opening stock number) x per head market value of stock.

Scenario: Self replacing herd in south-west Queensland

Herd data	
Does in herd	1,000
Bucks%	2%
Joining age	1
Sale age (years)	1
Kidding rate	150%
Death rate – adults	5%
Death rate – kids	10%
Does cast for age (cfa) (years)	6
Bucks cfa (years)	3

Value of enterprise output				
Sales	Number		\$/hd	Total \$
Cast for age does	150		\$35	\$5,250
Yearling females	441		\$35	\$15,435
Yearling males	614		\$40	\$24,560
Cast for age bucks	7		\$40	\$280
Totals sales income				\$45,525
Stock purchases	Number		\$/hd	Total
Does	0			\$0
Bucks	7		\$300	\$2,100
Total stock purchases				\$2,100
Livestock inventory	Opening no.	Closing no.	\$/hd	
Does	1000	1050	\$35	\$1,750
Kids	1287	1300	\$15	\$195
Replacement maiden does	200	205	\$35	\$175
Bucks	20	20	\$250	0
Total value of livestock changes				\$2,120

Value of enterprise output = \$45,525 – \$2,100 + \$2,120

= \$45,545

Variable costs [#]			
	Number units	\$/unit	Total
Drenching	1237	0	
Vaccination	1500	0	
Tags, rings, etc	1300 tags	\$0.30/tag	\$390.00
Supplements	1000 head	\$2.00/hd	\$2,000.00
Vermin control			\$600.00
Casual labour			\$1,500.00
Selling charges	3%		\$1,366.00
Cartage	500km	\$2.50/km	\$1,250.00
Total variable costs			\$7,106.00

[#] The variable costs listed in this table are specific to the example enterprise. For a full list of potential variable costs that may apply to a goat enterprise see Module 2 - Financial analysis Toolkit 2 page 4.

$$\text{Gross margin} = \$45,545 - \$7,106$$

$$\begin{aligned} \text{Gross margin per DSE}^* &= (\$45,454 - \$7,106) / 1748 \text{ dse} \\ &= \$38,439 / 1,748 \\ &= \$21.99 / \text{dse} \end{aligned}$$

* For further information on dse ratings, see table on the following page.

$$\begin{aligned} \text{Gross margin per doe} &= (\$45,454 - \$7,106) / 1050 \text{ doe} \\ &= \$38,439 / 1050 \\ &= \$36.60 / \text{doe} \end{aligned}$$

Dry sheep equivalents for range of goat classes:¹⁷

Class of goat	Dry sheep equivalent (dse)	Weight range
1 dry doe	0.75	30-40kg
1 breeding doe	1.5 (doe in a herd producing 150% kids)	40-60kg
1 weaner	0.7 (weaning to one year old)	20-40kg
1 buck	1.5	60-80kg

¹⁷ Blood, D. and Williams R. (2005). The Grazing of Goats in the Pastoral Areas of Western Australian. Best Management Practice – July 2005. Department of Planning and Infrastructure Western Australian Government; Pastoral Lands Board.

Tool 2.4

Example of a partial budget

This is an example of a partial budget looking at changing from running 600 ewes and 12 rams to an enterprise of 1000 does and 20 bucks. In this example the sheep

costs have been estimated and the goat information is the same scenario as in *Module 2 - Financial analysis Toolkit 2 page 7*.

Costs and losses as a result of incorporating the new enterprise (-)	Example (+)	Gains and savings as a result of incorporating the new enterprise	Example
A. Returns from the original business that have been forgone as a result of the change.	\$27,000 <i>Wool & cfa stock</i>	E. Returns from new enterprise.	\$45,525 <i>Sale of Kids, cull does and cull bucks</i>
B. Variable costs of the new enterprise	\$7,106	F. Variable costs from original business that have been avoided as a result of the change.	\$10,500 <i>Shearing costs and sheep health</i>
C. Overhead costs of the new enterprise.	\$5,000	G. Overhead costs from original business that have been avoided as a result of the change.	No change
D. Total costs and losses associated with the new enterprise = A + B + C	\$39,106	H. Total gain associated with the new enterprise = E + F + G	\$56,025
		I. Overall gain from new enterprise = H - D	\$16,919
J. Extra tax incurred with the new enterprise = marginal tax rate x extra taxable income (may be different from E).	Assume no change.		
		K. Gain from new enterprise after tax = I - J	\$16,919
L. Capital required for set up of new enterprise (eg purchase of stock, infrastructure, extra land).	<i>Purchase 1000 does and 20 bucks</i> \$40,000	M. Any capital released from original business as result of the change (eg sale of infrastructure or stock that are no longer required).	<i>Sale of 600 ewes and 12 rams</i> \$18,240 \$18,240
N. Net capital investment in new enterprise = L - M	\$21,760		
		O. % Return on extra capital invested = (K/M) x 100	77.75%

Tool 2.5

A partial budget investigating the use of goats for weed control

This example shows the calculations for buying 400 does and 12 bucks to assist in weed control. Income will be derived from

the goat breeding enterprise and the herbicide costs will be saved as a result of the goats reducing the weed burden.

Costs and losses as a result of incorporating the new enterprise (-)	Example (+)	Gains and savings as a result of incorporating the new enterprise	Example
A. Returns from the original business that have been forgone as a result of the change.	No change	E. Returns from new enterprise.	Sale of kids, cfa does and bucks \$14,797
B. Variable costs of the new enterprise.	\$6,558	F. Variable costs from original business that have been avoided as a result of the change.	No Change
C. Overhead costs of the new enterprise	\$1,000	G. Overhead costs from original business that have been avoided as a result of the change.	\$2,000 Weed chemical and spray application
D. Total costs and losses associated with the new enterprise = A + B + C	\$7,558	H. Total gain associated with the new enterprise = E + F + G	\$16,797 \$16,797
		I. Overall gain from new enterprise = H - D	\$9,239
J. Extra tax incurred with the new enterprise = marginal tax rate x extra taxable income (may be different from E).	Assume no change		
		K. Gain from new enterprise after tax = I - J	\$9,239
L. Capital required for set up of new enterprise (eg purchase of stock, infrastructure, extra land).	400 does & 8 bucks \$14,400	M. Any capital released from original business as result of the change (eg sale of infrastructure or stock that are no longer required).	No change
N. Net capital investment in new enterprise = L - M	\$14,400		
		O. % Return on extra capital invested = (K/N) x 100	64%

Tool 2.6

Fall-back marketing options

Target market	Fall-back options
Breeding stock	Those not suitable for sale as breeders can be sold to the live-export trade or carcass trade.
Live export	Goats that are not suitable for the live trade may be consigned to the carcass trade, generally as commodity goatmeat.
Carcass trade – capretto	Kids that do not make the target weights or have been weaned can be carried on to the chevon trade, or sold as unfinished animals to finishers or feedlots.
Carcass trade – chevon	Goats that do not meet the required weight specifications by 18 months of age, or whilst still classed as two-tooth, can be sold for commodity goatmeat in either the carcass or live-export trades.
Carcass trade – commodity goatmeat	Older, heavy goats that are not sold in the carcass trade for commodity goat, may be eligible for sale in some of the live-export commodity goatmeat markets.

Tool 2.7

BizCheck®, benchmarks for meat enterprises – intensive enterprises¹⁸

BizCheck® for Meat is a workshop for red-meat producers which includes the use of a computer software program to analyse farm business data. The summary of collected

data has been used to develop benchmarks for the important business indicators.¹⁹ A summary of the benchmarks for some of the more relevant indicators is provided below. You can use these figures to compare the performance of your own enterprise and identify your business' strengths and weaknesses.

Indicator	Benchmarks		
	Weak	Medium	Strong
Operating costs Farm operating costs as a percentage of income.	Above	60–50%	Below
Debt Financing cost as a percentage of income.	Above	15–7%	Below
Machinery and livestock investment Value of livestock as a percentage of livestock income.	Above	200–150%	Below
Machinery clearing sale value as a ratio of farm income.	Above	Ratio of 0.6–0.4	Below
Farm profit per household	Below	\$30,000 – \$60,000 per household	Above

For more information on these figures or to get involved in a BizCheck® workshop contact your state EDGENetwork® coordinator. To find your state contacts for EDGENetwork® contact Meat & Livestock Australia.

¹⁸ Meat & Livestock Australia (2000). BizCheck® for Meat – workshop notes. EDGENetwork® workshop. Meat & Livestock Australia.

¹⁹ Meat & Livestock Australia (2000). BizCheck® for Meat – workshop notes. EDGENetwork® workshop. Meat & Livestock Australia.

Tool 2.8

Profitability of an extensive goatmeat enterprise

Summary of Producer Initiated Research and Development (PIRD) Project – G2001/Q14, Sustainable Meat Goat Management.

Final Report, August 2004, Meat & Livestock Australia

A group of five goatmeat producers from southern Queensland undertook an analysis of enterprise profitability as part of a Producer Initiated Research and Development (PIRD) Project. The producers were typically cattle and/or sheep producers who had added a goatmeat enterprise to their business and were keen to analyse and compare the performance of the enterprise.

Although this summary focuses on the profitability component, the PIRD Project also involved developing a measure of feed available and determining sustainable stocking rates for different types of country.

The group used production and financial figures from the financial years ending 2001 and 2004. Gross margin was the chosen method of analysis.

The analysis revealed that the average gross margin for 2004 was \$11.24/dse, which was up 17% on 2001. The data showed that the income levels for 2001 and 2004 were very similar, with the biggest impact being a reduction in costs. On average, the variable expenses for the group had halved between 2001 and 2004. The cost reduction was explained as follows:

- With increasing experience, producers had found that “goats do not need much attention or treatment if given enough room and a reasonable spread of vegetation.”

- Two years of drought had caused producers to cut back on expenditure.

In terms of variation within the group, the key profit driver was identified as percentage of offspring sold per doe, high figures being achieved through a combination of high kidding percentage and high sale percentage. The producer with the highest gross margin in the group had a sale goat-to-doe sale ratio of 135%, compared with the rest of the group which averaged less than 50%. Those producers with low figures identified the significant impact of drought, resulting in stock losses, low kidding percentages and less saleable goats.

The group found that gross-margin analysis was a useful tool for comparison, but provided a few cautionary notes:

- The gross margin is a snapshot of one point in time.
- It does not take account of some of the secondary benefits of running goats such as regrowth control and the positive impacts of complementary grazing, especially where cattle are involved.
- The gross margin for a particular year can be greatly distorted if there is any carry-over sales from a previous year, a major drought or sudden change in market prices.
- Gross margin is only part of the story when looking at whole farm profitability.

As a result of the analysis, the group's key recommendation for management was careful management of stocking rate, to ensure that stock requirements and the availability of vegetation are in balance. The impact on profitability is that adequate nutrition, especially for does, increases kidding percentage, survival rates and growth of offspring.