

Red Sky Farm Performance Analysis DAIRY DEFINITIONS

The following definitions are those used throughout Red Sky Farm Performance Analysis. They are listed here in alphabetical order. Where a definition refers to a separate definition then this is highlighted in ***bold italics***.

Adjustments (to Operating profit) – this includes all 'book' or non-operating adjustments to Operating Surplus. These adjustments include ***Livestock values, Feeds/Supplements on hand, Imputed labour & Management, Depreciation, Other revenue adjustments*** and ***Other expenses adjustments***.

Administration – this includes all office expenses (e.g. computing, postage, printing, stationery, subscriptions, telephone/tolls), accountancy fees, legal fees, advisory/ consultancy fees, non-staff advertising, conferences, traveling, accommodation and entertainment.

Agistment – (see also ***Grazing***) this item under ***Feeds/Supplements*** in ***Operating profit*** includes all direct agistment costs plus any lease or rental costs on properties primarily associated with grazing replacement livestock. All other lease and rental costs associated with land are categorised as ***Financing costs***.

Animal health – this includes drenches, dips, teat sprays, veterinary fees and drugs (not those related to pregnancy). Animal health costs related to calf rearing are included here.

Assets – (also see ***Total assets***) this includes both fixed and current assets. These are recorded at both ***Market values*** and at ***4-Year rolling average values*** for land & buildings and livestock.

Average cost of all consumed feed – this is the weighted average of ***Pasture cost*** plus ***Forage cost*** plus ***Concentrate cost***.

Average cost of all supplements – this is the weighted average of ***Forage cost*** plus ***Concentrate cost***.

Breeding & herd testing – this includes semen and inseminating costs (including storage and technician), CIDR and cycling costs, pregnancy diagnosis, herd testing, herd/flock fees and registrations, and all other breeding/recording costs (including eartags and other ID).

Capital concentrate cost = (***Opportunity cost of capital*** x Proportion of capital assets utilised for concentrate feeding) + Proportion of depreciation on capital assets. This measure records the capital cost attributed to concentrates on a per tonne basis.

Capital efficiency = ***Asset turnover ratio*** = ***Gross revenue / Total assets*** at start of year at ***4-Year rolling values*** x 100. This is a percentage measure of how efficiently assets are being used to generate revenue by calculating the value of production in relation to the value of assets.

Capital forage cost = (***Opportunity cost of capital*** x Proportion of capital assets utilised for forage feeding) + Proportion of depreciation on capital assets. This measure records the capital cost attributed to forages on a per tonne basis.

Capital gain – this is calculated from the change in capital values of all assets between the start and end of each year after allowing for depreciation and any additional introduced capital.

Capital pasture cost = (***Opportunity cost of capital*** x Proportion of capital assets utilised for pasture production) + Proportion of depreciation on capital assets. This measure records the capital cost attributed to pasture on a per tonne basis.

Change in equity = Equity at end of year – Equity at start of year.

Change in equity % = [Equity at end of year – Equity at start of year] / Equity at start of year x 100. This percentage measure of profitability records the rate of increase in equity and is arguably the most important measure of personal financial performance.

Change in working capital = ***Operating surplus*** – ***Debt servicing costs*** – Assets purchased + Long term debt raised – Tax paid – Drawings. This measure of liquidity records the accrued working capital surplus after all incoming and outgoing cash flows. The resultant figure should be a positive number if the business is to finish the year in a better cash

Red Sky Farm Performance Analysis DAIRY DEFINITIONS

position than at the start of the year. If the figure is negative, then the end of year result would normally be either a higher overdraft level or reduced cash on hand.

Concentrate cost (per tDM consumed including wastage) = (*Purchased concentrate cost* + *Variable concentrate cost* + *Capital concentrate cost*) / Weighted average wastage rate. This is a complete assessment of concentrate costs (not a gross margin cost) and is a measure of how efficiently concentrates are being purchased and fed to livestock.

Concentrate cost (cents/MJ ME consumed) = *Concentrate cost (per tDM consumed including wastage)* / Weighted average energy density per kilogram dry matter / 10.

Core per cow cost = (Animal health + Breeding + Dairy shed expenses + Electricity + Grazing/Support area + Freight + 50% Repairs & maintenance + 30% Rates, Licenses, Levies & Insurance + 70% Vehicle expenses + 50% Depreciation) / Number of cows in herd. This measure of efficiency determines the underlying livestock cost structure of the business after removing the major cost centres influenced by different farming systems.

Core per hectare cost per tDM pasture harvest = (Administration + Cropping (green feed) + Phosphate & all other fertiliser + Pasture maintenance & renovation + 50% Repairs & maintenance + 70% Rates, Licenses, Levies & Insurance + 30% Vehicle expenses + 50% Depreciation) / Effective milking area / tDM pasture harvest. This measure of efficiency determines the underlying land cost structure of the business after removing the major cost centres influenced by different farming systems.

Core per hectare cost = (Administration + 50% Nitrogen fertiliser + Phosphate & all other fertiliser + Irrigation + Pasture maintenance & renovation + 50% Repairs & maintenance + Rates, Licenses, Levies & Insurance + 50% Vehicle expenses + 50% Depreciation) / Effective milking area. This measure of efficiency determines the underlying land cost structure of the business after removing the major cost centres influenced by different farming systems.

Cost of production per litre [or kg milksolids] = (*Operating expenses* – *Livestock revenue* – *Other non-milk revenue*) / Total litres sold [or Total milksolids sold]. This measure of risk records the effective nett cost of producing each litre or kg and can be used for break-even analysis.

Cost of production + Financing cost per litre [or kg milksolids] = (*Cost of production* + *Total financing costs* – Support area lease costs) / Total litres sold [or Total milksolids sold]. This measure of risk effectively provides a "breakeven" milk price which will cover operating costs and debt servicing costs.

Cow liveweight per milking hectare = Number cows in herd x Average cow liveweight / Effective milking hectares. This measure is an alternative measure to stocking rate.

Cows per full time staff equivalent = *Number of cows in herd* / *Total 50-hour week equivalent full time staff*. This measure of efficiency records the number of cows that are being milked per 50-hour full time staff equivalent.

Dairy shed expenses – this includes all consumables such as cleaning chemicals, rubberware, aprons, brushes and other cleaning items.

Debt servicing costs as percent of gross revenue = (*Financing costs* + *Principal repayments*) / *Gross revenue* x 100. This measure of risk records the proportion of gross revenue that goes towards debt servicing.

Depreciation – this includes depreciation on buildings, vehicles, plant and machinery. It does not include depreciation on land development as land development is usually maintained over future years through direct costs recorded as **Repairs & maintenance**. Adjustments to annualised expenses that have multiple year benefits as well as accelerated depreciation are also included under Depreciation.

Direct pasture cost – this is the direct costs of pasture production including fertiliser, irrigation, pasture renovation, weed, pest and cropping expenses.

Effective area – this is the total effective area attributed to this farming type after deducting all non-effective areas such as laneways, buildings, drains, hedge rows as well as any waste areas. Standard deductions for laneways, buildings, troughs and gateways on dairy farms are 2%-3% and on sheep and beef farms are 1%-2%. Where most paddocks have open

Red Sky Farm Performance Analysis DAIRY DEFINITIONS

drains then these would increase by a further 1%-2%. This is the area that is used for all sheep, beef and other Per Hectare comparisons (not for dairy – see Effective Milking Area).

Effective milking area = Effective area – Effective area-Dairy young. This is the effective milking area of a dairy farm after deducting the proportion of the Effective Area that would be required to run any young replacement stock that are over 3 months of age and kept on the milking area. This is the area that is used for all dairy farming Per Hectare comparisons.

Effective area-Dairy young – this is the effective area attributed to raising young stock over 3 months of age when these are grazed on the Effective or productive dairy area. In an instance where there is a 20%-25% replacement rate and these are reared on the productive dairy area only until they are 10-12 months of age then the effective area for dairy young stock would be approximately 4% of the total effective area. Where there is a 20%-25% replacement rate and these are reared on the productive dairy area only from 10-12 months of age through until they are 20-22 months of age then the effective area for dairy young stock would be approximately 11% of the total effective area. Where there is a 20%-25% replacement rate and these are fully reared on the productive dairy area through until they enter the herd then the effective area for dairy young stock would be approximately 15% of the total effective area.

Electricity – this includes all farm use electricity but should not include electricity used for **Irrigation** or non-tax deductible private use.

Energy Corrected Milk (ECM) – this is milk corrected to 4.0% milkfat and 3.3% protein using the formula milk production x ((0.383 x fat% + 0.242 x protein% + 0.7832) / 3.1138).

Equity = Total assets – Total liabilities. This is a measure of risk or solvency.

Equity % = Equity / Total assets x 100. This is a percentage measure of risk or solvency.

Feed conversion efficiency – is calculated by dividing the amount of energy consumed by the cows in the herd by a standardised 11 MJME/kgDM so that energy density of feed does not impact on this calculation. This standardised quantity of dry matter consumed by the cows in the herd is then divided by the amount of milk produced by the cows (including calf milk, discarded milk and other milk not supplied for sale).

Feeds/Supplements – the costs for Feeds/Supplements include the full cost of these items. This should include freight/cartage costs, harvesting costs, growing costs (including cultivation, fertiliser, weed and pest control) and storage costs.

Feeds/Supplements on Hand (Adjustments to Operating Profit) – this includes any change in the value of Feeds/Supplements on Hand between the Start and End of the Year.

Fertiliser-Nitrogen – this includes the full value of nitrogen fertiliser applied to the farm, including the cost of cartage and spreading. The value of sulphur and/or phosphate from any combined fertilisers should be deducted and entered under **Fertiliser-Phosphate & all other fertiliser**.

Fertiliser-Phosphate & all other fertiliser – This should include all fertiliser expense that is not nitrogen related, including the cost of cartage and spreading. It should also include the sulphur and/or phosphate component of fertilisers that also have a nitrogen component.

Financing costs per kg milksolids = (Interest + Bank charges + Loan fees + Lease fees & Rentals) / Total milksolids sold x 100. This measure of risk records the proportion of the milk revenue that goes towards the payment of financing costs.

Financing costs as percent of Gross revenue = (Interest + Bank charges + Loan fees + Lease fees & Rentals) / **Gross revenue** x 100. This measure of risk records the proportion of Gross Revenue that goes towards the payment of financing costs.

Forage cost (per tDM consumed including wastage) = (Purchased forage cost + Variable forage cost + Capital forage cost) / Weighted average wastage rate. This is a complete assessment of forage costs (not a gross margin cost) and is a measure of how efficiently forages are being purchased and fed to livestock.

Forage cost (cents/MJ ME consumed) = Forage cost (per tDM consumed including wastage) / Weighted average energy density per kilogram dry matter / 10.

Red Sky Farm Performance Analysis DAIRY DEFINITIONS

(Four) 4-year rolling average value – this is meant to represent the likely medium-term value of the asset and could be calculated by averaging the 4 most recent year's values.

Freight – this should primarily represent livestock freight. The cartage of products such as milk or fibre should be calculated within the product revenue, while fertiliser cartage should be under fertiliser, feeds freight under the relevant feed category and so on.

Grazing – (see also **Agistment**) this item under **Feeds/Supplements** in **Operating profit** includes all direct grazing costs plus any lease or rental costs on properties primarily associated with grazing replacement livestock. All other lease and rental costs associated with land are categorised as **Financing costs**.

Gross expenses per cow excluding supplements and nitrogen = (Gross expenses – Concentrates – Forages – Nitrogen) / Number of cows in herd. This measure of efficiency determines the underlying cost structure of the business after removing the major cost centres influenced by different farming systems.

Gross operating expenses = **Total operating expenses** – **Feeds/Supplements on hand** – **Imputed labour & management** – **Depreciation** – **Other expenses adjustments**.

Gross revenue = **Total operating revenue** + **Livestock values (Adjustments)** + **Other revenue adjustments**.

Heifer & 'Other' Total Feed Cost – this includes all concentrate and forage costs not designated as fed to the milking and dry cows plus all grazing/support area costs.

Home produced forage as percent of total – this is the percentage of total forage produced and purchased that was produced on owned or leased land. Grass silage and hay produced on the milking area is excluded as this forms part of the pasture harvested on the milking area and so is not designated as a forage supplement.

Homegrown Forage – this includes all forage that is produced on owned or leased land (as opposed to '**Imported Forage**' which is forage purchased from a separate independent business). See also '**Homegrown Forage Cost (Per tDM)**'.

Homegrown Forage Cost (Per tDM) – this ratio only applies to forage produced during the financial year and does not include the cost per tonne of stock on hand at the start of the year, stock on hand at the end of the year, or forage sold from or consumed off the home area. All other forage cost calculations do take account of these other costs.

Imported Forage – this includes all forage that is purchased from a separate independent business. See also '**Imported Forage Cost (Per tDM)**'.

Imported Forage Cost (Per tDM) – this ratio only applies to forage purchased during the financial year and does not include the cost per tonne of stock on hand at the start of the year, stock on hand at the end of the year, or forage sold from or consumed off the home area. All other forage cost calculations do take account of these other costs.

Imputed labour & management (Adjustments to operating profit) – this includes an assessment of the market value of imputed management and staff time contributed by the stakeholders but not remunerated within the accounts of the business. Management is calculated on a per cow basis for dairying (see **Imputed management-Dairy** below). Contributions for non-management staff time is calculated on an hourly basis.

Imputed management-Dairy (Adjustments to operating profit) – this is calculated on a per cow basis where there is a minimum management wage that applies to any farm with less than a base number of cows, as well as a maximum management wage that applies to any farm over a predetermined number of cows. A curvilinear relationship of increasing salary is approximated between these minimum and maximum values. **Please contact Red Sky if you would like the exact details of this relationship for your country/region.**

Interest cover = (**Operating profit** + Support area lease fees) / **Total Financing Costs**. This measure is used by banks to assess the ability of a business to service the debt carried by the business.

Irrigation – this includes water rates, repairs and maintenance of all irrigation structures, fuel and electricity for running irrigation pumps, and all other costs relevant to irrigation.

Liabilities – (also see **Total liabilities**) this includes both long term and current liabilities.

Red Sky Farm Performance Analysis DAIRY DEFINITIONS

Litres (ECM) as Multiple of Cow Liveweight = ECM litres produced per cow / cow liveweight. This is a measure of cow productivity and is a more appropriate measure of efficiency than litres per cow.

Livestock values (Adjustments to operating profit) – this includes any change in the value of Livestock on Hand between the Start and End of the Year. This does not include any change in the per head value but only includes the change in numbers on the basis of 4-year rolling average values at the start of the year.

Management & staff costs per cow = Management & staff expenses / Number of cows in herd. This measure of efficiency determines the overall cost of all labour utilised in the business.

Manufacturing milk sales – this includes all accrued revenue received from manufacturing milk sales produced in the relevant year.

Market value – this is meant to represent the assessed or estimated full market value of the asset.

Megalitres used per area – this is the total of all irrigated water applications plus useable rainfall over the irrigation season divided by effective area (including those designated for dairy young stock).

Milksolids as percent of cow liveweight = kgMS produced per cow / cow liveweight x 100. This is a percentage measure of cow productivity and is a more appropriate measure of efficiency than milksolids per cow.

Non-effective area – this is the non-effective area which includes areas such as laneways, buildings, drains, hedge rows as well as any waste areas. Standard non-effective areas for laneways, buildings, troughs and gateways on dairy farms are 2%-3% and on sheep and beef farms are 1%-2%. Where most paddocks have open drains then these would increase by a further 1%-2%.

Number of cows in herd (CIH) – this is the combined average number of cows in milk (CIM) plus average number of dry (non-milking) cows for the year. In a seasonal supply farm this will often be similar to the peak total number of milking cows that were milked for a minimum of 2-3 months. This number of 'CIH' is the figure that is used for all "per cow" calculations.

Operating surplus = *Total operating revenue* – *Total operating expenses*. This measure of liquidity records the accrued farm surplus prior to any 'book' or non-operating adjustments, prior to financing costs, and prior to any changes to assets and liabilities.

Operating profit (loss) = *Operating surplus* – *adjustments (to Operating Profit)*. This is a measure of profit and can be used for comparative farm analysis when divided by farm area (i.e. Operating profit per hectare).

Operating profit margin = *Operating profit* / *Gross revenue* x 100. This percentage measure of risk records the proportion of gross revenue that is retained as profit.

Opportunity cost of capital = (Prime 12-month Deposit Rate x 60%) + (First Mortgage Borrowing Rate x 40%). This percentage measure is a mix of deposit and borrowing rates that approximate the average proportion of funds employed in farm businesses. This is used as a hurdle rate for returns on capital in a number of calculations.

Other expenses adjustments (Adjustments to operating profit) – this includes 'book' or non-operating adjustments to Operating Farm Expenses where there has been no other appropriate entry point to make the change. For instance, this may be due to an expense being incorrectly recorded in its appropriate year.

Other revenue adjustments (Adjustments to operating profit) – this includes 'book' or non-operating adjustments to Operating Farm Revenue where there has been no other appropriate entry point to make the change. For instance, this may be due to revenue being incorrectly recorded in its appropriate year.

Pasture as percent of total consumed = *Energy consumed from pasture on farm* / *Total energy consumed by livestock on farm* x 100. This is a determinant of production system as well as a percentage measure of risk.

Red Sky Farm Performance Analysis DAIRY DEFINITIONS

Pasture cost (per tDM) = *Direct pasture cost + Variable pasture cost + Capital pasture cost*. This is a complete assessment of pasture costs (not a gross margin cost) and is a measure of how efficiently pasture is being grown and fed to livestock.

Pasture cost (cents/MJ ME consumed) = *Pasture cost (per tDM) / Average energy density per kilogram dry matter / 10*. The average energy density per kilogram dry matter for both Australia and New Zealand is set at 11.0 MJ ME/kgDM.

Pasture dry matter harvested (tDM/ha) – this is the equivalent tonnage of standardised energy density pasture consumed per hectare. Any hay and silage conserved on the farm is included in the total pasture yield. This is a measure that is correlated to profitability in pasture-based farming systems.

Pasture Dry Matter Harvested per Megalitre (tDM/ML) – This is total pasture dry matter consumed (including green feed crops) divided by the total of all irrigated water applications plus useable rainfall over the irrigation season.

Peak Milking Cow Numbers – see *Number of cows in herd (CIH)*.

Purchase/Production Concentrate Cost – this is the direct cost of purchased concentrates including any storage cost. When a concentrate is stored for a period of time then a monthly interest cost is calculated at 3% above the **Opportunity Cost of Capital**.

Purchase/Production Forage Cost – this is the direct cost of purchased forages including any storage cost. When a forage is stored for a period of time then a monthly interest cost is calculated at 3% above the **Opportunity Cost of Capital**.

Quota/Contract/Winter Milk – this includes all accrued premiums received over and above the value of basic milk as a result of quota, contract or winter milk. The calculated milk price does not include this. This revenue is shown as *Other Revenue* in the reports.

Rates, Licenses, Levies & Insurance – this includes insurance, industry levies, licenses, permits and rates.

Repairs & Maintenance – this includes repairs and maintenance to buildings, dairy/cowshed (not consumables), houses, sheds, drains (not irrigation), fences, yards, laneways, plant and machinery (not vehicles), races, shelter belts, tools (including assets purchased for less than \$300) and water supply.

Return on Assets = (Operating Profit – Lease on Land & Buildings) / Total Owned Assets at Start of Year x 100. This should be assessed with capital gains/losses both included and excluded. This percentage measure of profitability records the return on total assets owned by the business and is the second most important measure of business performance after Return on Capital. If there are no leased assets, then Return on Assets will be exactly the same as Return on Capital.

Return on Capital = Operating Profit / Total Assets under Management at Start of Year x 100. This should be assessed with capital gains/losses both included and excluded. This percentage measure of profitability records the return on total assets employed in the business and is arguably the most important measure of business performance.

Return on Equity = (Operating Profit – Total Financing Costs) / Equity at Start of Year x 100. This should be assessed with capital gains/losses both included and excluded. This percentage measure of profitability records the return on equity utilised in the business.

Supplement as percent of Total Consumed = Energy Consumed from Supplements / Total Energy Consumed by Livestock on Farm x 100. This is a percentage measure of risk.

Supplement cost – includes all concentrate and forage costs (excluding all pasture costs).

Total 50-Hour Week Equivalent Full Time Staff – this is the equivalent number of staff required to work the farm if all paid and imputed staff (including management) were working a 50-hour week.

Total Assets – (also see **Assets**) this includes both Fixed and Current Assets with these recorded at the start and end of each year. These are recorded at both **Market Values** and at **4-Year Rolling Average Values** for land & buildings and livestock.

Red Sky Farm Performance Analysis DAIRY DEFINITIONS

Total Assets per Ha at Start of Year (4-Yr Av Values) – this is the value of Total Assets at the Start of the Year (owned & leased) / Total Effective Area.

Total Debt Servicing Costs = *Financing Costs* + *Principal Repayments*.

Total Effective Dairy Area – this is the total effective area attributed to this farming type after deducting all non-effective areas such as laneways, buildings, drains, hedge rows as well as any waste areas. Standard deductions for laneways, buildings, troughs and gateways on dairy farms are 2%-3%. Where most paddocks have open drains then these would increase by a further 1%-2%. This is not the area that is used for dairy Per Hectare comparisons (see Effective Milking Area).

Total Feed Cost – includes all concentrate, forage and pasture costs, where pasture costs include pasture maintenance and renovation (including green feed crops grazed in situ), fertiliser (including nitrogen), pasture irrigation costs, and direct silage and hay costs for pasture conserved on dairy farm.

Total Financing Costs = *Interest* + *Bank Charges* + *Loan Fees* + *Lease Fees & Rentals*.

Total Hours Worked per Week – this includes all paid and imputed hours worked by staff and management.

Total Liabilities – (also see *Liabilities*) this includes both Long Term and Current Liabilities with these recorded at the start and end of each year.

Total Imputed Labour & Management – this includes an assessment of the market value of imputed management and staff time contributed by the stakeholders but not remunerated within the accounts of the business. Management is calculated on a per cow basis. Contributions for non-management staff time are calculated on an hourly basis.

Total Operating Expenses as % of Gross Revenue = *Total Operating Expenses* / *Gross Revenue* x 100. This percentage measure of risk records the proportion of Gross Revenue that goes towards the payment of operating expenses.

Total Operating Expenses – this is the cash farm expenses prior to any 'book' or non-operating adjustments, prior to financing costs, and prior to any changes to assets and liabilities.

Total Operating Revenue – this is the cash farm revenue prior to any 'book' or non-operating adjustments.

Variable Concentrate Cost – this includes an assessment of the proportion of repairs and maintenance, vehicle expense (including fuel and oil) and wages, salaries and employment expenses that should be attributed to concentrate feeding. Red Sky assumes that 60% of repairs and maintenance, 70% of vehicle expense (including fuel and oil) and 40% of wages, salaries and employment expenses are attributable to feeding, with these proportions then split between pasture, forages and concentrates on the basis of their proportion in the diet. These concentrate costs are then reduced to 20% (pasture costs reduced to 90% and forage costs increased to 110%). The result is a complete assessment of variable concentrate costs as opposed to a gross margin cost.

Variable Forage Cost – this includes an assessment of the proportion of repairs and maintenance, vehicle expense (including fuel and oil) and wages, salaries and employment expenses that should be attributed to forage feeding. Red Sky assumes that 60% of repairs and maintenance, 70% of vehicle expense (including fuel and oil) and 40% of wages, salaries and employment expenses are attributable to feeding, with these proportions then split between pasture, forages and concentrates on the basis of their proportion in the diet. These forage costs are then increased to 110% (pasture costs reduced to 90% and concentrate costs reduced to 20%). The result is a complete assessment of variable forage costs as opposed to a gross margin cost.

Variable Pasture Cost – this includes an assessment of the proportion of repairs and maintenance, vehicle expense (including fuel and oil) and wages, salaries and employment expenses that should be attributed to growing pasture. Red Sky assumes that 60% of repairs and maintenance, 70% of vehicle expense (including fuel and oil) and 40% of wages, salaries and employment expenses are attributable to feeding with these proportions then split between pasture, forages and concentrates on the basis of their proportion in the diet. These pasture costs are then reduced to 90% (forage costs increased to 110% and

Red Sky Farm Performance Analysis DAIRY DEFINITIONS

concentrate costs reduced to 20%). The result is a complete assessment of variable pasture costs as opposed to a gross margin cost.

Vehicle Expenses (including fuel & oil) – this includes all costs associated with vehicles used for farm business including repairs and maintenance, fuel and oil, insurance and registration.

Wages, Salaries & Employment Expenses – this includes all employment related expenses, salaries, wages, management fees, contract employment fees, sharefarmer/sharemilker fees, superannuation paid on behalf of staff, ACC levies, workers insurance, work care, work cover and workers compensation.