



# Cost of Production Network Glossary

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## Profitability Numbers

### Whole-farm returns

**Agri benchmark:** Market returns (+ coupled payments) (+ decoupled payments)

Know as: 'Total revenue' or 'value of production' (Agri Profits, 2018)

**Value of Production (VOP):** the value of what was produced by the cow/calf enterprise over the course of the production year. Includes cash and non-cash values of:

- cull and breeding stock sales,
- revenues from miscellaneous sources (e.g., Program payments, patronage refunds, etc.) as allocated to the cow/calf enterprise,
- inventory adjustments relating changes in the number and value of stock included in the enterprise,
- an adjustment for livestock purchases (value is added only from the point of purchase forward).

(Agri Profits, 2019) Note: Above is an enterprise level definition

### Whole-farm costs

**Agri benchmark:** Direct costs enterprises, overhead costs, paid labour, paid rents, paid interest, depreciation.

Know as: 'Total costs' (Agri Profits, 2018)

Total costs = Direct costs + Capital costs

### Whole Farm Profitability

**Agri benchmark:** Market returns (+ coupled payments) (+ decoupled payments) – whole-farm costs +/- changes in inventory +/- capital gains/losses.

### Net income

**Agri benchmark:** Whole-farm returns – Whole Farm costs

#### Agri Profits

Net returns = Revenue – direct costs – capital costs

(Agri Profits, 2018)

Net Return = VOP less total production costs.

(Agri Profits, 2019) Note: enterprise level

Total Production Costs: sum of all variable and fixed production costs.

#### Farm Financial Standards Council

Income before Income Tax (Net Farm Income): is calculated by matching revenues with expenses incurred to create those revenues, plus the gain or loss on the sale of business assets, but before taxes. This subtotal is commonly referred to as NFI

(Farm Financial Standards Council, 2020)

## Net cash farm income (NCFI)

**Agri benchmark:** Whole farm profitability + depreciation + changes in inventory + capital gains/losses.

Known as: 'Net farm income' (Agri Profits, 2018)

## Margin over operating costs

**Agri benchmark:** method of analysis for retained ownership

Margin = sale price \$/head – Purchase price \$/head

Operating costs: direct costs excluding costs that require allocation (e.g. machinery repair, etc.)

**Alternative:**

Enterprise analysis: calculate the COP using all costs (cash, depreciation, and opportunity costs) to reflect the true costs producers face for their retained ownership.

## Short-term profitability

**Agri benchmark:** Total returns minus cash costs.

## Mid-term profitability

**Agri benchmark:** Total returns minus (cash costs + depreciation).

## Long-term profitability

**Agri benchmark:** Total returns minus (cash costs + depreciation + opportunity cost).

## Income structure

**Agri benchmark:** Income (mid-term profit) from agriculture and non-agricultural activities (off farm investments, salary of family members).

## Profit Margin

**Agri benchmark:** Family farm income divided by total returns

**Farm Financial Standards Council:**

Operating Profit Margin Ratio: (Income from operations – Owner withdrawals for unpaid labor and management) ÷ Gross revenues

Gross Revenue: The total of all revenues received for goods produced for sale or for services rendered in a specified period of time from business activities that constitute the major, ongoing, central operations of the business.

**Interpretation of Operating Profit Margin Ratio:**

This ratio measures profitability in terms of return per dollar of gross revenue. A farm business has two ways to increase profits—either by increasing the profit per unit produced or by increasing the volume of production (if the business is profitable). A relationship exists between the rate of return on farm assets, the asset turnover ratio, and the operating profit margin ratio. If the asset turnover

ratio is multiplied by the operating profit margin ratio, the result is the rate of return on assets. This relationship holds only when gross revenue is used to calculate both operating profit margin and asset turnover or when the value of farm production is used to calculate both measures.

(Farm Financial Standards Council, 2020)

## Cost Structure used for Profitability Ratios

### Cash Cost

**Agri benchmark:** Cash cost for purchased feed, fertiliser, seeds, fuel, maintenance, land rents, interest on liabilities, wages paid, veterinary costs plus medicine, water, insurance, accounting, etc (excl. VAT).

=Total farm costs - depreciation

### Agri Profits

Total cash costs: sum of enterprise cash costs, considering home grown feeds, bedding and pasture as cash costs

(Agri Profits, 2019)

### Cost from the profit and loss account

**Agri benchmark:** Cash cost + depreciation.

### Depreciation

**Agri benchmark:** Linear depreciation on machinery and buildings, calculated on replacement values.

### Factor costs

**Agri benchmark:** are the sum of labour, land and capital cost (including opportunity cost).

### Non-Factor Costs

**Agri benchmark:** The residual of total cost less factor costs including depreciation

### Alternative

Selected variable and fixed cost

### Variable enterprise costs

**Agri benchmark:** Animal purchases + Feed + Repairs + Fuel, energy, lubricants, water + Vet & medicine + Other inputs cow calf enterprise + Other inputs + Labour + Paid Labour+ Unpaid Labour

### Agri Profits:

Other Variable Costs: (seeds, fertilizer, chemical, and crop Insurance, custom work, etc.) a sum of the other costs used in the production

(Agri Profits, 2018)

## Fixed costs

**Agri benchmark:** Land improvement + Maintenance machinery + Maintenance buildings + Contract labour + Diesel for vehicles + Diesel for heating/irrigation + Gasoline + Gas + Electricity + Water + Farm insurance + Disability and accident insurance + Farm taxes and duties + Advisor costs + Accountant & legal fees + Phone & utilities + Other

### Agri Profits:

Fixed Costs: sum of such allocated overheads as: depreciation & mach./equip't/ bldg. lease payments on assets, share/lease cattle payments, property taxes, insurances, licences & term loan interest

(Agri Profits, 2018)

Know as: 'Overhead Costs'

## Opportunity cost

**Agri benchmark:** Calculated cost for using own production factors like labour (family working hours \* wage for qualified local labour, land (own land \* regional land rents) and capital (non-land equity \* long-term government bonds interest rate)

Example: resources (i.e., the replacement breeding animals which could otherwise have been sold) being used by retaining the animals for breeding purposes is not reflected in net income (Farm Financial Standards Council, 2020).

## Labour

### Hours worked

**Agri benchmark:** For hired as well as for family labour the hours worked per person are taken from the accounting information or are estimated during the panel. The general formula for each person is average hours worked per day \* working days per year (i.e. 365 days less holidays less off-days less sickness days). Less working hours on specific week days like Saturdays or Sundays are reflected as well as additional hours worked during e.g. harvest or calving season. The hours worked per day exclude lunch breaks but include minor breaks, talks, tea drinking and other social events during work as they can affect productivity both positively and negatively. For orientation, standard hours for employees and hired labour are 2,400 hours per year and 2,700 hours per year for a full family person, respectively.

### Agri Profits

Labour Hours/Cow: Total Labour Hrs / CowsWintered

(Agri Profits, 2019)

## Wages paid

**Agri Benchmark:** Gross salary + social fees (insurance, taxes, etc.) the employer has to cover for permanent and casual employees.

## Opportunity cost labour

**Agri benchmark:** Calculated wage for family labour; either off-farm salary or farm manager salary.

## Average wages on the farm

**Agri benchmark:** This figure represents the gross salary plus social fees (insurance, taxes, etc.) the employer has to cover. Calculation: Total labour cost (wages paid plus opportunity cost) divided by the total hours worked. To calculate it, the number of hours worked by the employees and the family have been calculated with the assistance of advisors and farmers.

## Labour cost

**Agri Benchmark:** Wages paid (cost for hired labour) + calculated wages for family labour (opportunity cost).

### Agri Profits:

Labour Costs: a sum of paid and contributed labour, as allocated to the cow/calf enterprise. Paid labour is valued at cost, while unpaid labour is valued at a standard or base cost.

(Agri Profits, 2019)

Labour Costs: a sum of paid & contributed labour. Unpaid labour is valued at a standard or base cost

(Agri Profits, 2018)

## Physical labour productivity I

**Agri benchmark:** Kilogram of live weight or carcass weight sold per hour labour input (employed / paid labour plus family labour).

## Physical labour productivity II

**Agri Benchmark:** Like Physical Labour Productivity I, but using the weight added as a reference unit. Economic labour productivity USD returns per USD labour cost.

## Return to labour

**Agri benchmark:** Entrepreneurs profit plus labour cost (wages paid plus opportunity cost) divided by total labour input

### Agri Profits

Return to Unpaid Labour: Revenue/VOP less Total Production Costs plus Unpaid Labour

(Agri Profits, 2018)

## Land

### Land use

**Agri benchmark:** The relative proportion of land use by the beef enterprise. The total amount of land used for feed production on the farm is 100 %. Please note that purchased concentrates are not included.

### Land rents

**Agri benchmark:** paid Rental price per ha for existing contracts.  
Know as: 'land lease'

Note: Agri benchmark is a per hector

### Opportunity cost land

**Agri benchmark:** These are land rents for new contracts in case that the farm would rent out own land. They reflect the future cost of renting land.

### Land cost

**Agri benchmark:** Rents paid + calculated land rents for own land (opportunity cost).

### Physical land productivity

**Agri benchmark:** Kilogram live weight or carcass weight sold per ha land input (hired and owned).

### Economic land productivity

**Agri benchmark:** Total returns in USD per USD land cost (paid and calculated).

## Capital

### Liabilities

**Agri benchmark:** Sum of current loan value of short, medium and long term loans as well as operating loans.

### Own capital (equity)

**Agri benchmark:** Total assets excluding land, quota and cash on hand plus circulating capital less total liabilities as defined above (min=0).

Known as: '*Total farmers equity*'

### Interest rate paid

**Agri benchmark:** The interest paid, differentiated in short-term, mid-term, long-term interest as well as interest on operating loans.

### Opportunity cost capital

**Agri benchmark:** Interest rate for long-term government bonds \* equity without land (values of machines, buildings, livestock, circulating capital less total loans).

## Capital cost

**Agri benchmark:** Interest paid + opportunity cost.

### Agri Profits:

Capital cost: share and lease cattle payments + taxes, water rates, lic & insurance  
+ depreciation + lease payments + paid capital interest  
(Agri Profits, 2018)

## Capital productivity

**Agri benchmark:** Kilograms live weight or carcass weight sold per 1,000 USD capital assets

## Non-market incomes

### Coupled government payments

**Agri benchmark:** Crop (acreage) payments, livestock payments, organic and environmental payments and whole farm payments (for example for Less Favoured Areas, diesel subsidy) which can be assigned to the finishing enterprise.

Know as: *'Government payments'*

### Decoupled payments

**Agri benchmark:** All payments which are not linked to the production of goods and paid irrespective of producing goods or not.

### Side returns

**Agri benchmark:** Beef side products like hide and skin, manure for sale if not included in meat price and every kind of payments from the government (Cattle and beef payments, acreage payments, fuel subsidies, less favoured area payments)

### Off-farm income

**Agri benchmark:** Income from outside the farm which is not using farm resources. Examples: earnings of wife working outside the farm, income from renting out land if not included in farm acreage, income of husband working as farm

### Other farm income

**Agri benchmark:** Returns from activities which use farm resources like horse keeping, forestry, machinery services for third

## Return structure

**Agri benchmark:** Composition of whole-farm returns

## Cow-calf enterprise economic data

## Animal purchases

**Agri benchmark:** Cost for buying animals for the cow-calf enterprise from outside the farm, for example breeding bulls, replacement heifers.

## Approximation of feed costs (AFC)

**Agri benchmark:** Calculated as feed cost (purchase feed + fertiliser, seed and pesticides for own feed production) + machinery cost (machinery maintenance + depreciation + contractor) + fuel, energy, lubricants and water + land cost (land rents paid + opportunity cost own land)

### Agri Profits:

Winter Feed & Bedding Costs: the market value cost of all feeds and straw bedding used by the enterprise

Pasture Costs: the market value of grazing used by the enterprise  
(Agri Profits, 2018)

Winter Feed Costs: the cost of all feeds used by the cow/calf enterprise, purchased or homegrown, based on the market value of these feeds (not the cost of raising the feeds).

Pasture Costs: the value of grazing used by the cow/calf enterprise (exclusive of any other retained ownership / backgrounding uses). Pasture is valued into the cow/calf enterprise at market value (not cost) and is treated as a “cash” cost.  
(Agri Profits, 2019)

## Beef / calf and feeder price

**Agri benchmark:** Average beef / calf and feeder prices in the year considered.

## Beef price

**Agri benchmark:** Average beef price per carcass weight in the year considered.

## Calf/weaner/backgrounder prices per 100 kg live weight

**Agri benchmark:** Farm gate sale price per 100 kg live weight at the day of weaning.

## Calf/weaner/backgrounder prices per head

**Agri benchmark:** Farm gate sale price per head at the day of weaning.

## Weaner and transfer to beef receipts

**Agri benchmark:** Receipts from weaners sold and weaners and other animals (i.e. cows) transferred to the own beef finishing enterprise

## Cow-calf enterprise production system

### Age at first calving

**Agri benchmark:** Months of age when heifers have their first calf.

## Calf and feeder price

**Agri benchmark:** Average calf and feeder prices of calendar year 20XX (exc. VAT) expressed per 100 kg live weight.

## Calf losses (mortality) (%)

**Agri benchmark:** Number of calves that die between birth and weaning as a percentage of total calves born

**Agri Profits:**

Death Loss of Calves (%): # Calves Died / Live Births  
(Agri Profits, 2019)

## Calving percentage (%)

**Agri benchmark:** Number of calves alive within 24 hours after birth as a percentage of total cows

**Agri Profits:**

Calving Rate (%): # Livebirths / # Bred Females  
(Agri Profits, 2018)

## Cost of the cow-calf enterprise

**Agri benchmark:** All costs of the cow-calf enterprise. The cow-calf enterprise as a part of the whole farm includes all beef cows, breeding bulls, calves and replacement heifers and the fodder production for all these animals.

Know as: '*Variable enterprise costs*'

## Replacement rate (%)

**Agri benchmark:** Number of cull cows plus number of cows died as a percentage of total cows.

## Total live weight sold per cow and year

**Agri benchmark:** Total live weight of weaners, cull cows, cull heifers and breeding animals sold per year divided by the total number of cows.

## Weaning percentage

**Agri benchmark:** Number of calves weaned (born minus losses) per 100 cows and year.

**Agri Profits:**

Weaning Rate (%): # Weaned/# Exposed Females  
Weaned Wt. as % of Cow Wt. -Avg. Lbs: Weaned (adjusting bred heifer wts.) /  
Avg. Mature Cow Wt.  
(Agri Profits, 2019)

## Weight at weaning

**Agri benchmark:** Live weight at the day of weaning. This weight is taken as the sale or transfer weight of the weaners.

**Agri Profits:**



Lbs. Weaned/Cow Exposed: Total Lbs. / # Females Weaned Exposed Lbs.  
Weaned/Cow Wintered: Total Lbs. Weaned /# Opening Inventory of Bred Cows  
and Heifers

(Agri Profits, 2019)

### Standardised 200 day weaning weight

**Agri benchmark:** Weaning weights adjusted to 200 days age. Calculation: 200 days /  
weaning age \* weaning weight

**Agri Profits:**

205 adjusted weaning weight = ((weaning weight – birth weight)/ days old)/ 205  
days

(Beef Cattle Research Council, 2021)

### Total live weight sold

**Agri benchmark:** Sum of the weight of cull animals (cows, bulls, surplus heifers),  
breeding animals (surplus heifers), weaner calves and adult animals sold or transferred  
to the beef finishing enterprise per year.

**Agri Profits:**

Production Stock Sales: revenues associated with the sale of weaned calves and  
other non-breeding stock related sales

(Agri Profits, 2019)

### Total live weight sold per cow

**Agri benchmark:** Total live weight sold divided by the number of cows.

### Stocking rate

**Agri benchmark:** Livestock units (1 LU = 500 kg live weight) per ha forage area based on  
average number of animals

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