Glossary of terms used in agri benchmark

Whole farm

Area	Name of variable	Explanation / definition
Assumptions		
	Harvest years / agricultural years	They usually comprise two calendar years, e.g. July 2000 - June 2001.
	TIPI-CAL year	The model calculates on a calendar year basis (January – December).
	Year used for calculation	The year of the last month of the harvest / agricultural year is used to determine the *agri benchmark* calendar year used in TIPI-CAL as calendar year. Example: Agricultural year July 2000 to June 2001 is defined as calendar
	Value addded tax (VAT)	All values in the *agri benchmark* analysis are **without** VAT.
	Calves or feeder cattle for fattening from own dairy or cow calf herd	If there is a market price for these calves, this price less transport and marketing cost is used for pricing the calves.
	Grains and forage from own production	Grains and forage produced on the farm are priced with their total cost of production and allocated to the livestock enterprises according to the land use of these enterprises.
	Allocated and overhead cost	Cost on whole farm level (fixed cost) that are allocated to the enterprises for cost analysis.
Non-market incomes		
	Coupled government payments	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.
	Decoupled payments	All payments which are not linked to the production of goods and paid irrespective of producing goods or not.
	Side returns	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	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	Returns from activities which use farm resources like horse keeping, forestry, machinery services for third
	Return structure	Composition of whole-farm returns.
Profitability figures		
	Whole-farm returns	Market returns (+ coupled payments) (+ decoupled payments).
	Whole-farm costs	Direct costs enterprises, overhead costs, paid labour, paid rents, paid interest, depreciation.
	Whole-farm profitability	Market returns (+ coupled payments) (+ decoupled payments) − whole-farm costs +/− changes in inventory +/− capital gains/losses.
	Net cash farm income NCFI	Whole farm profitability + depreciation + changes in inventory + capital gains/losses.
	Short-term profitability	Total returns minus cash costs.
	Mid-term profitability	Total returns minus (cash costs + depreciation).
	Long-term profitability	Total returns minus (cash costs + depreciation + opportunity cost).
	Income structure	Income (mid-term profit) from agriculture and non-agricultural activities (off farm investments, salary of family members).
	Profit margin	Family farm income divided by total returns.

Glossary of terms used in agri benchmark

Whole farm

Area	Name of variable	Explanation / definition
The following costs for production factors (labour, land, capital) are calculated similarly for all enterprises based on the enterprise-specific cost allocation applied.		
Labour		
	Hours worked	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.
	Wages paid	Gross salary + social fees (insurance, taxes, etc.) the employer has to cover for permanent and casual employees.
	Opportunity cost labour	Calculated wage for family labour; either off-farm salary or farm manager salary.
	Average wages on the farm	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	Wages paid (cost for hired labour) + calculated wages for family labour (opportunity cost).
	Physical labour productivity I	Kilogram of live weight or carcass weight sold per hour labour input (employed / paid labour plus family labour).
	Physical labour productivity II	Like Physical Labour Producivity I, but using the weight added as a reference unit.
	Economic labour productivity	USD returns per USD labour cost.
	Return to labour	Entrepreneurs profit plus labour cost (wages paid plus opportunity cost) divided by total labour input.
Land		
	Land use	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 paid	Rental price per ha for existing contracts.
	Opportunity cost land	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	Rents paid + calculated land rents for own land (opportunity cost).
	Physical land productivity	Kilogram live weight or carcass weight sold per ha land input (hired and owned).
	Economic land productivity	Total returns in USD per USD land cost (paid and calculated).

Glossary of terms used in agri benchmark

Whole farm

Area	Name of variable	Explanation / definition
Capital		
	Liabilities	Sum of current loan value of short, medium and long term loans as well as operating loans.
	Own capital (equity)	Total assets excluding land, quota and cash on hand plus circulating capital less total liabilities as defined above (min=0).
	Interest rate paid	The interest paid, differentiated in short-term, mid-term, long-term interest as well as interest on operating loans.
	Opportunity cost capital	Interest rate for long-term government bonds * equity without land (values of machines, buildings, livestock, circulating capital less total loans).
	Capital cost	Interest paid + opportunity cost.
	Capital productivity	Kilograms live weight or carcass weight sold per 1,000 USD capital assets.
Cost structure used for profitability calculations		
	Cash cost	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).
	Cost from the profit and loss account	Cash cost + depreciation.
	Depreciation	Linear depreciation on machinery and buildings, calculated on replacement values.
	Factor cost	Sum of labour, land and capital cost (including opportunity cost).
	Non-factor cost	The residual of total cost less factor costs including depreciation.
	Opportunity cost	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).
Price indices in national currencies		
	Domestic impact	The change in costs associated with changes in domestic prices and productivity with the USD exchange rate kept constant.
	Exchange rate impact	The change in costs associated with changes in the USD-exchange rate with national price and productivities kept constant.
	GDP-Deflator	It is a price index measuring changes in prices of all new, domestically produced, final goods and services in an economy. GDP stands for gross domestic product, the total value of all goods and services produced within that economy during a specified period. The list of GDP-deflators used is provided in Annex A.1.
	Real prices	Real prices are derived by adjusting nominal (market) prices for inflation. To do this, an appropriate deflator has to be chosen. For this exercise, the decision was made for the GDP-deflator as it reflects all goods and services of the economy. To obtain the real price index from the nominal price index the following calculation was performed: Nominal price index / GDP-deflator * 100.

Glossary of terms used in agri benchmark

Beef Finishing

Area	Name of variable	Explanation / definition
Beef finishing production system (in alphabetical order)		
	Age at start and end	Age in days when animals enter and leave the system.
	Backgrounder / Store / Feeder	Animals between 4 and 15 months beyond the calf / weaner stage which had an initial fattening phase.
	Cattle number	Total number of fattening cattle produced per year. Also used to indicate farm sizes of *agri benchmark* beef farms.
	Cost of the beef enterprise	All cost of the beef enterprise. The beef enterprise as a part of the whole farm includes all beef cattle and the fodder production for all these animals.
	Daily weight gain	Weight at end minus weight at start divided by duration of fattening period expressed in g per day.
	(Dairy) Calf	Young animal of dairy origin between 7 and 120 days of age.
	Dressing percentage	Also carcass yield. Carcass weight divided by live weight when finished animals are slaughtered (weight at slaughterhouse).
	Duration of fattening period, finishing period	Number of days animals stay in the system (age at end minus age at start).
	Meat produced	Total weight of meat added to the animal during the fattening period, expressed as live weight or carcass weight.
	Meat sold	Weight of meat sold at end of fattening period = final weight of the animal, expressed as live weight or carcass weight.
	Net gain	Carcass weight divided by age at slaughter.
	Losses / mortality	Number of animals that die between start and end of the finishing period as a percentage of animals entering the system..
	Weaner (calf)	Animal between 105 and 355 days coming from cow-calf.
	Weight added	Total weight added during finishing period in kg LW.
	Weight at start and end	Live weight when animals enter and leave the system.
	Stocking rate	Livestock units (1 LU = 500 kg live weight) per ha forage area based on average number of animals.
Beef finishing economic data (in alphabetical order)		
	Factor costs	Costs for production factors labour, land, capital (with opportuntiy costs).
	Non-factor costs	All other costs (total costs less factor costs).
	Non-beef returns of the beef enterprise	By-products of the beef production like skin, horns and manure and direct payments, if any.
	Returns of the beef enterprise	Sales of beef cattle, direct payments minus balance in livestock inventory plus other returns of the beef enterprise.
	Total cost of the beef enterprise	All costs of the beef enterprise. The relevant part of overhead and fixed costs on whole farm level were allocated to the beef enterprise.

Glossary of terms used in agri benchmark

Cow-calf

Area	Name of variable	Explanation / definition
Cow-calf enterprise production system (in alphabetical order)		
	Age at first calving	Months of age when heifers have their first calf.
	Calf and feeder price	Average calf and feeder prices of calendar year 20XX (exc. VAT) expressed per 100 kg live weight.
	Calf losses (mortality) (%)	Number of calves that die between birth and weaning as a percentage of total calves born.
	Calving percentage (%)	Number of calves alive within 24 hours after birth as a percentage of total cows.
	Cost of the cow-calf enterprise	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.
	Replacement rate (%)	Number of cull cows plus number of cows died as a percentage of total cows.
	Total live weight sold per cow and year	Total live weight of weaners, cull cows, cull heifers and breeding animals sold per year divided by the total number of cows.
	Weaning percentage	Number of calves weaned (born minus losses) per 100 cows and year.
	Weight at weaning	Live weight at the day of weaning. This weight is taken as the sale or transfer weight of the weaners.
	Standardised 200 day weaning weight	Weaning weights adjusted to 200 days age. Calculation: 200 days / weaning age * weaning weight
	Total live weight sold	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.
	Total live weight sold per cow	Total live weight sold divided by the number of cows.
	Stocking rate	Livestock units (1 LU = 500 kg live weight) per ha forage area based on average number of animals.
Cow-calf enterprise economic data (in alphabetical order)		
	Animal purchases	Cost for buying animals for the cow-calf enterprise from outside the farm, for example breeding bulls, replacement heifers.
	Approximation of feed costs (AFC)	Calculated as feed cost (purchase feed + fertiliser, seed and pesticides for won feed production) + machinery cost (machinery maintenance + depreciation + contractor) + fuel, energy, lubricants and water + land cost (land rents paid + opportunity cost own land).
	Beef / calf and feeder price	Average beef / calf and feeder prices in the year considered.
	Beef price	Average beef price per carcass weight in the year considered.
	Calf/weaner/backgrounder prices per 100 kg live weight	Farm gate sale price per 100 kg live weight at the day of weaning.
	Calf/weaner/backgrounder prices per head	Farm gate sale price per head at the day of weaning.
	Factor costs	Costs for production factors labour, land, capital (with opportuntiy costs).
	Non-factor costs	All other costs (total costs less factor costs).
	Weaner and transfer to beef receipts	Receipts from weaners sold and weaners and other animals (i.e. cows) transferred to the own beef finishing enterprise.

Glossary of terms used in agri benchmark

Sheep (ewe)

Area	Name of variable	Explanation / definition
Sheep (ewe) enterprise production system (in alphabetical order)		
	Age at first lambing	Months of age when hoggets have their first lamb.
	Cost of the ewe enterprise	All costs of the ewe enterprise. The ewe enterprise as a part of the whole farm includes all sheep and the fodder production for all these animals.
	Lambs alive after one day (per ewe)	Number of lambs alive within 24 hours after birth per ewe.
	Lambs marked (per ewe)	Lambs marked as a proportion of the total number of ewes. This variable is used in those farms where lambs are not seen/controlled before marking.
	Lamb losses (mortality) (%)	Number of lambs that die between birth and weaning as a percentage of total lambs born.
	Number of lambs weaned per 100 ewes and year	(Number of lambs born alive less lamb losses until weaning) / total number of ewes.
	Replacement rate (%)	Number of cull ewes plus number of ewes died as a percentage of total ewes.
	Total live weight sold per ewe and year	The sum of slaughter lambs, store lambs, proportional cull ewe, cull young ewes and breeding animals live weight.
	Weaned lambs per 100 ewes and year	Number of lambs weaned (no. born minus losses).
	Weaning age (days)	Age at the day of weaning.
	Weaning percentage	Number of calves weaned per 100 cows and year.
	Weaning weight (kg)	Live weight at the day of weaning.
	Total live weight sold per ewe	Sum of the live weight of lambs, cull animals (ewes, rams, surplus young ewes), breeding animals sold or transferred to the beef finishing enterprise per year divided by the number of ewes.
Sheep (ewe) enterprise economic data (in alphabetical order)		
	Approximation of feed costs (AFC)	Calculated as feed cost (purchase feed + fertiliser, seed and pesticides for won feed production) + machinery cost (machinery maintenance + depreciation + contractor) + fuel, energy, lubricants and water + land cost (land rents paid + opportunity cost own land).
	Lamb prices	Average lamb prices (slaughtered at weaning and later) in the year considered.
	Total returns	All market returns from the ewe enterprise (meat from lambs and other animals, livestock, wool and skins) + payments allocated to the ewe enterprise + other returns (e.g., manure).

Glossary of terms used in agri benchmark

Country page

Area	Name of variable	Explanation / definition
Inventories, production and consumption		
	Total cattle	Total number of dairy cows, suckler cows, replacement heifers dairy, replacement heifers beef / suckler-herd, calves dairy, calves beef / suckler-herd, cattle on feed, breeding bulls.
	Suckler-cows	Cows used only to produce beef calves (contrary to dairy cows).
	Cattle on feed	All cattle which are kept for the purpose of finishing and slaughter. They do NOT include cull animals. Calculated as total cattle herd - dairy cows - beef cows - replacement heifers dairy herd - replacement heifers cow-calf herd - calves which are not weaned yet.
	Replacement heifers dairy herd	Calculated based on replacement rates and age at first calving.
	Replacement heifers cow-calf herd	Calculated based on replacement rates and age at first calving.
	Production (million head)	Number of animals annually slaughtered in the country.
	Production ('000 tons)	Beef production in carcass weight.
	Production (kg per head)	Carcass weight of one animal. Calculated as production ('000 tons) divided by production (million head).
	Extraction rate (%)	Production (million head) divided by total cattle.
	Consumption ('000 tons)	Beef consumption in thousand tons in the country.
	Population (million)	All the human inhabitants.
	Consumption (kg per capita)	Beef consumption per capita per year. Calculated as consumption ('000 tons) divided by population.
Trade		
	Export ('000 tons)	Total quantity in thousand tons of beef sent to another country.
	Export (USD million)	Total value in USD of beef sent to another country.
	Import ('000 tons)	Total quantity in thousand tons of beef received from another country.
	Import (USD million)	Total value in USD of beef received from another country.
Beef and livestock prices		
	Beef prices	Price without VAT paid for 1 kg of carcass weight or live weight.
	Livestock prices	Price paid for 1 kg of live weight or per head.

Glossary of terms used in agri benchmark

Animal categories and classification

Beef and livestock prices	Explanation
Animal categories	
Slaugher animals	
Bulls	Male (entire) animal for the purpose of fattening/finishing.
Steers	Male (castrated) animal for the purpose of fattening/finishing.
Heifers	Female animal whcih had not calved yet.
Cows	Female animal whcih had at least one calf.
Calves	Male and female animals before weaning.
Cull cow	Cow at the end of her service life which is sent to slaughter.
Cull bull	Breeding bull the end of his service life which is sent to slaughter.
Cull heifer	(Surplus) Heifer not used for replacend nor fatteing which is sent to slaughter.
Incoming animals (for fattening/finishing)	
Backgrounder / Store / Feeder	Animals between 4 and 15 months beyond the calf / weaner stage which had an initial fattening phase.
(Dairy) Calf	Young animal of dairy origin between 7 and 120 days of age.
Weaner (calf)	Animal between 105 and 355 days coming from cow-calf.
Other categories (mostly country specific)	
Yearling steer	A steer of aournd one year at slaughter (Australia)
Jap grassfed ox	Steers fed on pasture for export to Japan (Australia)
Fed heifers	Heifers finished and ready for slaughter (Canada)
Fed steers	Steers finished and ready for slaughter (Canada)
Steers 1st class	Colombian classification
Steers prime class	Colombian classification
Classification od animals and carcasses	
R3	**One class of the EU carcass classification based on Cuncil Regulation EEC 1208/81** http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31981R1208
	Conformation (the shape and development of the carcasses): is denoted by the letters S, E, U, R, O, P with S being the best and P the poorest;
	Fat: the degree of fat is denoted by the numbers 1, 2, 3, 4, 5 in order of increasing fatness
	Sex category: denoted by the letters A (young bull), B (bull), C (steer), D (cow) and E (heifer)
	R3 is an average classification and used for lead market prices in the EU
SEU	Czech Republic: classification S of the EU classification
ER	Spain: see above: Heifer with conformation class R
AR3	Spain: see above: Bukk with conformation class R3
Steer A-Grade	South Africa:
Steer full grown	South Africa:
Steer 4 tooth	South Africa:

Glossary of terms used in agri benchmark

Calculation flow

Whole-farm level

	TOTAL RECEIPTS
+	market receipts incl coupled government payments
+	decoupled payments whole farm level
–	**TOTAL EXPENSES**
+	variable costs enterprises
+	fixed costs whole farm
+	paid wages whole farm
+	paid land rent whole farm
+	paid interest on liabilities whole farm
=	**NET CASH FARM INCOME**
–	Depreciation
+ / -	Change in inventory
+	Interest on savings
+ / -	Capital gains / losses
=	**PROFIT, FARM INCOME**
–	Opportunity costs
+	calculated interest on own capital
+	calculated rent on land
+	calculated cost for own labour
=	**RETURN TO MANAGEMENT**

Enterprise level

	TOTAL RECEIPTS
+	market receipts incl coupled government payments of the enterprise considered
–	**TOTAL EXPENSES**
+	variable costs enterprise
+	fixed costs (allocated)
+	paid wages (allocated)
+	paid land rent (allocated)
+	paid interest on liabilities (allocated)
=	**NET CASH FARM INCOME**
–	Depreciation (allocated)
+ / -	Change in inventory
+	Interest on savings (allocated)
+ / -	Capital gains / losses (allocated)
=	**PROFIT, FARM INCOME**
–	Opportunity costs
+	calculated interest on own capital (allocated)
+	calculated rent on land (allocated)
+	calculated cost for own labour (allocated)
=	**RETURN TO MANAGEMENT**