Some agricultural economic concepts

2015

agriculture,
forestry & fisheries

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

Some agricultural economic concepts

2015

Fourth edition

2005 *Second revised edition*
1995 *First revised edition*
1987 *First edition*

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CONTENTS

DIAGRAMS

FOREWORD

In the foreword to the original edition on some "agricultural economic concepts" in 1986 it was stated that each subject field requires its own acceptable common terminology to eliminate confusion of speech and concepts. In developed countries such as the USA, UK and Australia the national standardisation of economic terminology has been in force for decades.

Although the Government's first serious national efforts in South Africa were only launched in the second half of the eighties, the book became very popular right from the start, while also fulfilling an essential need. The fact that the first edition of October 1986 had to be reprinted by means of a revised edition is clear evidence of its popularity. These agricultural economic concepts were also used voluntarily and on a wide basis in the training of agricultural economics students at various tertiary training institutions, which also made a huge contribution to fairly general acceptance.

The dawning of the new political dispensation in South Africa in 1994, globalisation and deregulation of agriculture played a significant role in edging agricultural economic concepts into the background at the production level. Currently there is, however, renewed interest in production and resource economics, which is also reflected in the new basic functions and organisational structures of the Department of Agriculture, Forestry and Fisheries. Where government operates on all three levels of authority (national, provincial and local) and is involved in agricultural matters, the need for standardisation is now even more important.

Based on this immediate and real need, the newly structured Directorate Statistics and Economic Analysis of the Department of Agriculture, Forestry and Fisheries decided to reprint the 2005 publication containing a few amendments.

If it appears that there is a need to revise or extend the concepts a revised edition will, after wide consultation, be printed in due course.

Your feedback in this connection will be greatly appreciated.

Director: Statistics and Economic Analysis

Pretoria
1 July 2015

1. Output terms

These terms relate to the value of production or yield of a specific farming enterprise, that is used on the farm or is sold. In certain instances it might also include sundry farm income.

1.1 **Gross value of production (GVP) for a livestock enterprise** is the total value of production of livestock products plus trading income plus the livestock inventory change. It is calculated as follows:

PRODUCT INCOME[1] =

Gross sales (including all advance, intermediate and supplementary payments)

+ Insurance received on products
+ Household use of products and donations
+ Produce consumed by labour
+ Produce consumed by other enterprises (internal transfers)
+ Stock adjustments (closing less opening stocks on hand)

plus

TRADING INCOME =

Livestock sales

+ Livestock slaughtered for home consumption (including donations)
+ Livestock slaughtered for labour
+ Insurance received for livestock losses
+ Other direct receipts (excluding products)
+ Transfers (out) to other livestock enterprises (internal transfers)
– Transfers (in) from other livestock enterprises (internal transfers)
– Livestock purchases

plus

INVENTORY CHANGE = Closing value of livestock

– Opening value of livestock

1.2 **Gross value of production (GVP) for a cash crop enterprise** is the total value of the production from that enterprise and includes only the marketable output which includes the following:

Gross sales (including all advance, intermediate and supplementary payments)

+ Insurance received as a result of crop losses
+ Household consumption (and donations)
+ Produce consumed by labour
+ Farm use for seed and feed (internal transfers)
+ Stock adjustments (closing less opening stock on hand)

[1] Only marketable products are included. Gross value of production is not calculated for products without a market value

NOTE: Gross value of production for fodder and pasture crops is reflected in the output of the livestock enterprise which consumes the crop.

The basic difference between cash and fodder or pasture crops depends mainly on the primary purpose for which the crop was planted. Where problems arise as a result of casual sales and/or marketable stocks on hand at the end of the production year (where the value of sales and/or marketable stocks on hand is substantial) it is preferable to treat the crop as a cash crop. Grazing value is ignored in such cases.

1.3 **Sundry farm income**[2] is an income which is derived from a farming activity but which cannot be directly allocated to a farming enterprise. It includes the following:

(a) Income derived from contract work with existing surplus capacity

(b) Bonus on turnover

(c) Farm produce sold which is difficult to allocate or of minor importance

(d) Sundry income from veld hired out and hay sold

(e) Sundry income from a fodder crop.

1.4 **Gross farm value of production** is the sum of all the farm enterprises, (cash crops and livestock enterprises) **plus** sundry farm income.

1.5 **Gross income of an enterprise** is calculated in the same way as gross value of production for crop and livestock enterprises except that internal transfers (intermediate inputs) of products from one enterprise to another are not taken into account.

1.6 **Gross farm income** is the sum of the gross incomes from all the cash crop and livestock enterprises on the farm, plus sundry farm incomes

or

equal to gross value of production less internal transfers, plus sundry farm incomes.

2 Discount on purchases, surplus farm requisites sold, subsidies and rebates received on farming requisites must preferably be deducted from the costs – if this is not possible, adjustments can be made to farm overhead costs

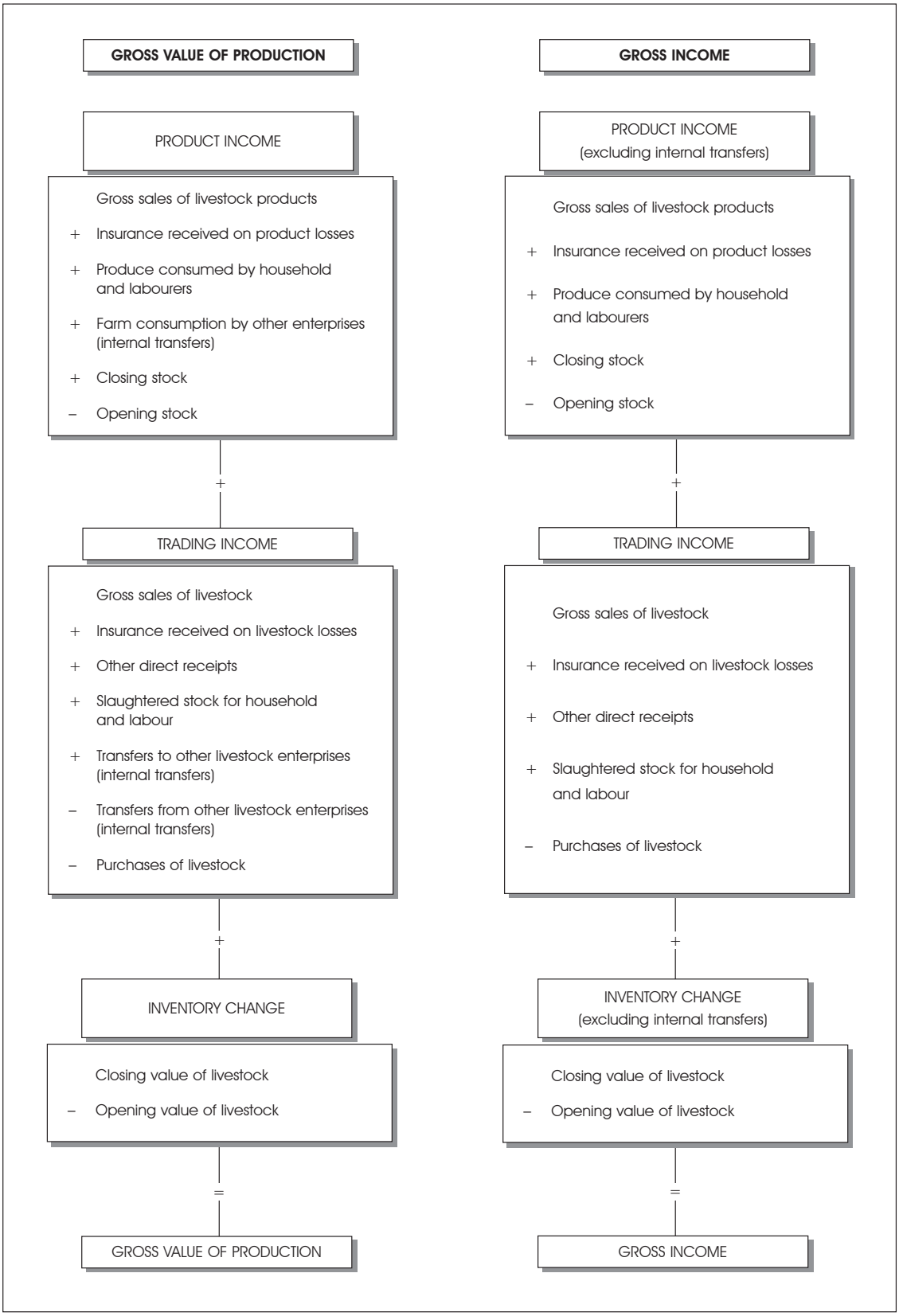

DIAGRAM 1. Difference between determining the gross value of production and gross income of a livestock enterprise

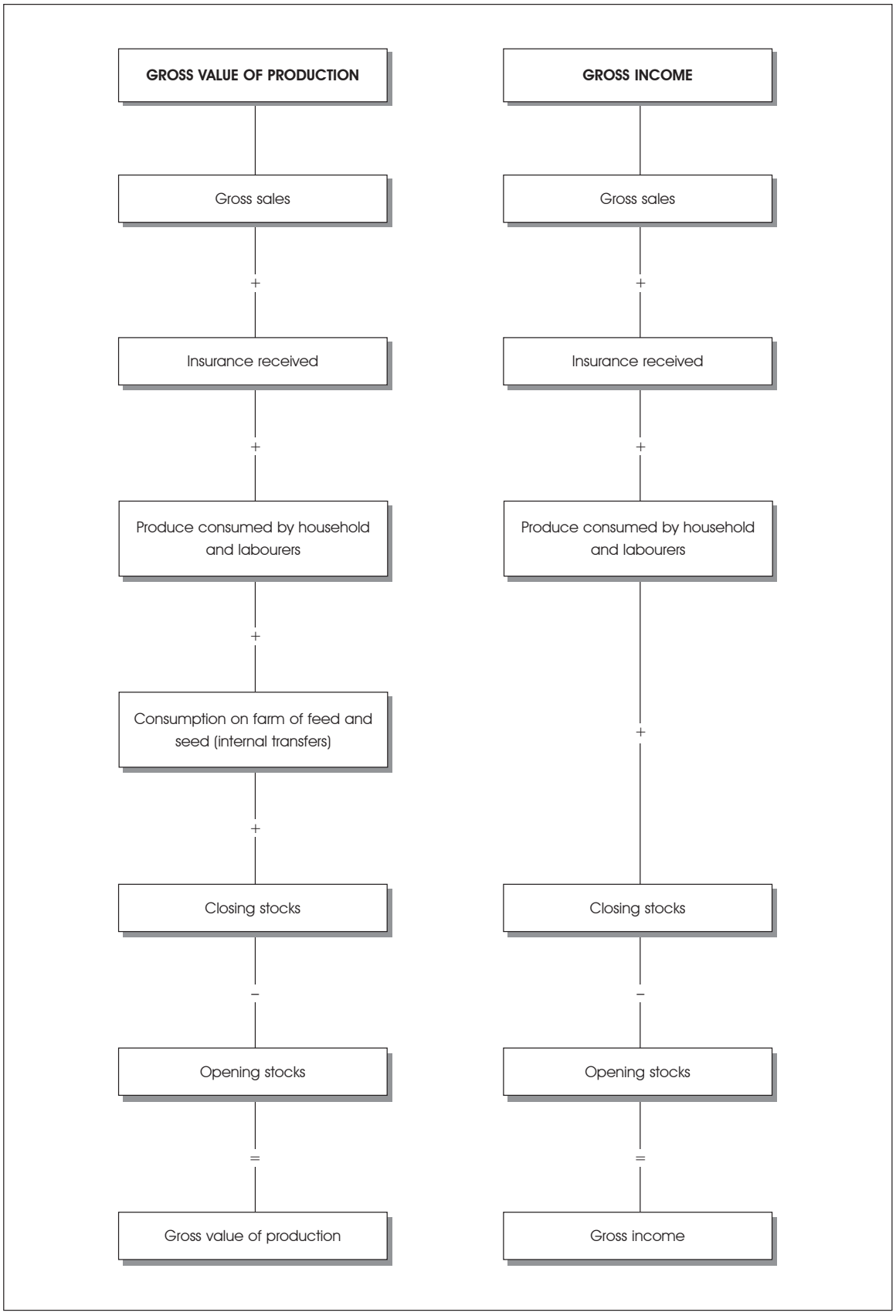

DIAGRAM 2. Difference between determining the gross value of production and gross income of a crop enterprise

2. INPUT TERMS

These terms relate to inputs used in the production process, for example feed, materials, labour and machinery that can be measured in physical and/or financial terms.

2.1 **Accounting input terms**

2.1.1 **Imputed charges** (or costs) are estimated costs representing the value of benefits enjoyed by a farming enterprise or the farm as a whole during the accounting period, but without any real expenditures having been incurred. These include the estimated rental value of land, or interest on own capital invested in land and fixed improvements owned by the operator, and also the value of unpaid labour and own management.

2.1.2 **Depreciation** involves the distribution of the cost of a durable asset over the productive life of that asset.

There are basically two approaches to the calculation of depreciation namely the accounting approach based on cost price, and the economic approach based on revaluation or replacement cost.

2.1.2.1 **The accounting approach to depreciation** is traditionally one of cost allocation. The initial cost of an asset *less* its scrap value (if any) is allocated over its lifetime on a systematic and rational basis.

The amount of depreciation that is written off must coincide with the decrease in value of the asset over time. The initial cost is a "pre-paid expense". When the asset is used in more than one financial year, then these costs should be distributed over the number of financial years that correspond to the productive life of the asset.

2.1.2.2 **The economic approach to depreciation** is to regard the original cost as irrelevant. With this aproach depreciation is the difference in the capital value at the beginning and end of the period under con- sideration.

2.2 **General cost terms**

2.2.1 **Total costs**[3] (TC) include the total costs of all resources used in the farming enterprise during a particular year including stock adjustments and non-cash items. Total costs consist of fixed and variable costs.

2.2.2 **Total factor costs** (TFaC) are the costs associated with capital (interest), land (rent or lease), labour (salary and wages) and management (salary).

2.2.2.1 **External factor costs** are interest, rent, wages and salaries, and management salaries actually paid in respect of hired production factors.

2.2.2.2 **Own factor costs** are the imputed charges in respect of production factors owned, or for own services rendered (labour and management).

2.2.3 **Total farm costs** (TFC) are total costs *less* total production factor costs (excluding labour).

2.2.4 **Variable costs** represent that portion of total costs that vary in (approximately) direct proportion to changes in the scale of that enterprise within a given production system, or if the intensity of production per unit changes. In other words, variable costs are those costs that can be controlled or avoided in the short term.

2.2.5 **Fixed costs** are that portion of total costs which are regarded as fixed in the short term and therefore cannot be avoided or controlled in the short term, irrespective of the scale or intensity of production.

2.2.6 **Directly allocatable costs** are that portion of variable or fixed costs which can be allocated to an enterprise without having to keep detailed records.

3 The term total costs is used when referring to the farm business as a whole. The term production cost is used when dealing with a specific farm enterprise and includes the total cost of all resources and services with the exception of marketing costs.

2.2.7 **Not directly allocatable costs** are that portion of variable or fixed costs that can only be realistically allocated to an enterprise if detailed records are kept.

2.2.8 **Unallocatable costs** are that portion of variable or fixed costs that cannot logically be allocated to any particular enterprise.

2.2.9 **Overhead costs** are that portion of the cost component that is not allocated to an enterprise.

2.2.10 **Interest and financing costs** are costs payable on debts, loans and overdraft accounts by the farm business (excluding capital redemption).

2.2.11 **Cost of hired management** includes the cost of any paid manager, or management service, employed by the farm business.

2.2.12 **Cost of regular labour** includes the cost of regular foremen and labourers (excluding hired management and work performed by the farmer and his family).

2.2.13 Imputed rent or lease on land and fixed improvements in the case of a free rider[4]. Imputed rent is the rental value of owner-occupied land and fixed improvements. The basis of assessment is rent paid by established farmers in a particular area on similar farms. On rented farms an imputed rent (incorporating a depreciation allowance) should be included[5] for any buildings or fixed improvements that have been erected at the cost of the tenant.

2.2.14 **Unpaid family labour costs** are based on the time spent on manual work by family workers (the farmer and his spouse included) not being paid a regular wage, valued at an appropriate hourly wage as earned by workers performing similar work.

2.2.15 **Marketing costs** include all direct and indirect costs that the producer must incur to market his product.

4 A free rider in economics refers to someone who benefits from recources, goods and services without paying for the cost of the benefit

5 Only applicable if it is not taken into account in the lease agreement (and thus rental)

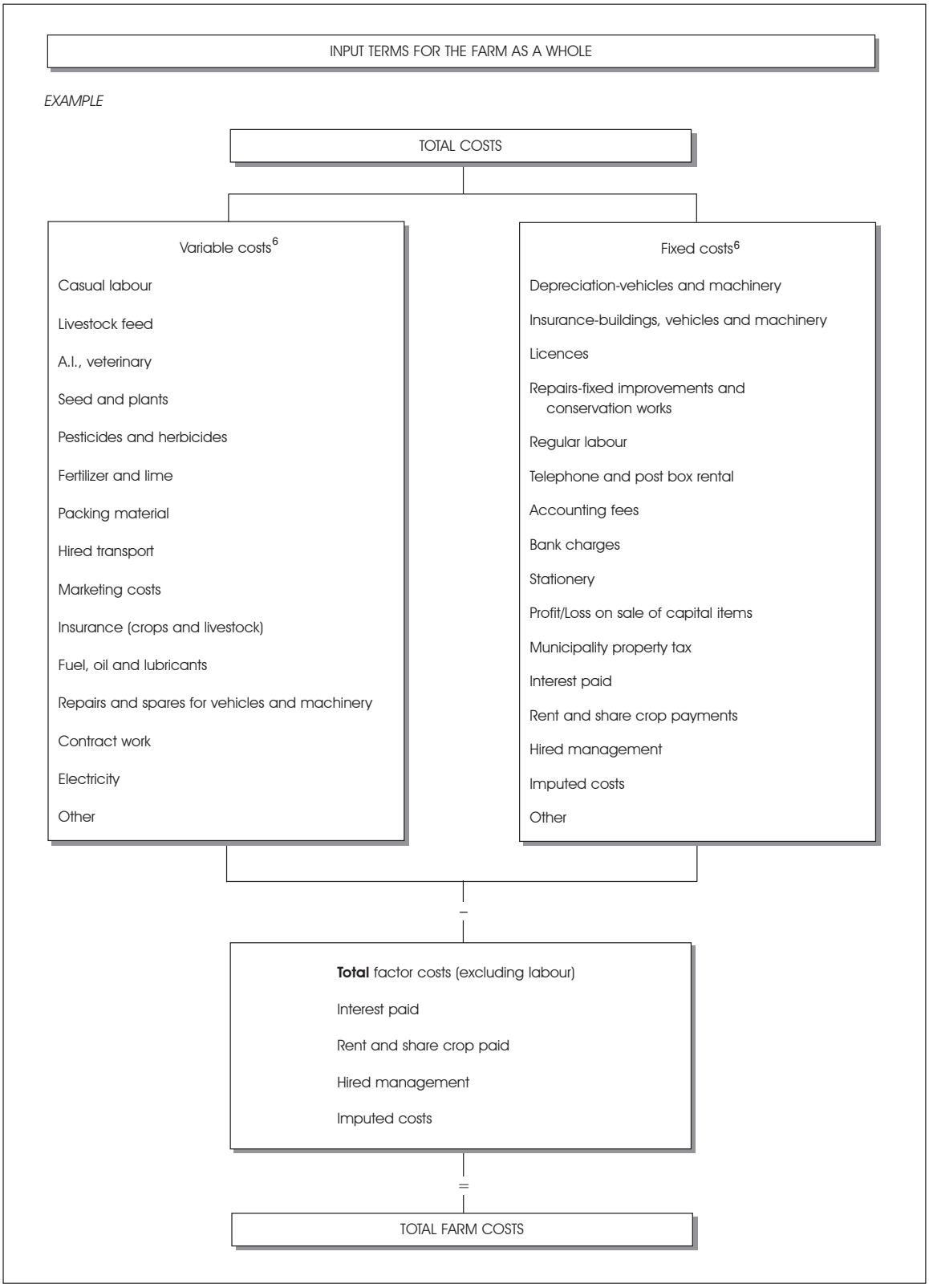

DIAGRAM 3. Explanation of input terms

6 The given division of costs is typical for a single production year in which the production capacity is usually given. Whether cost items are fixed or variable will depend largely on the period involved

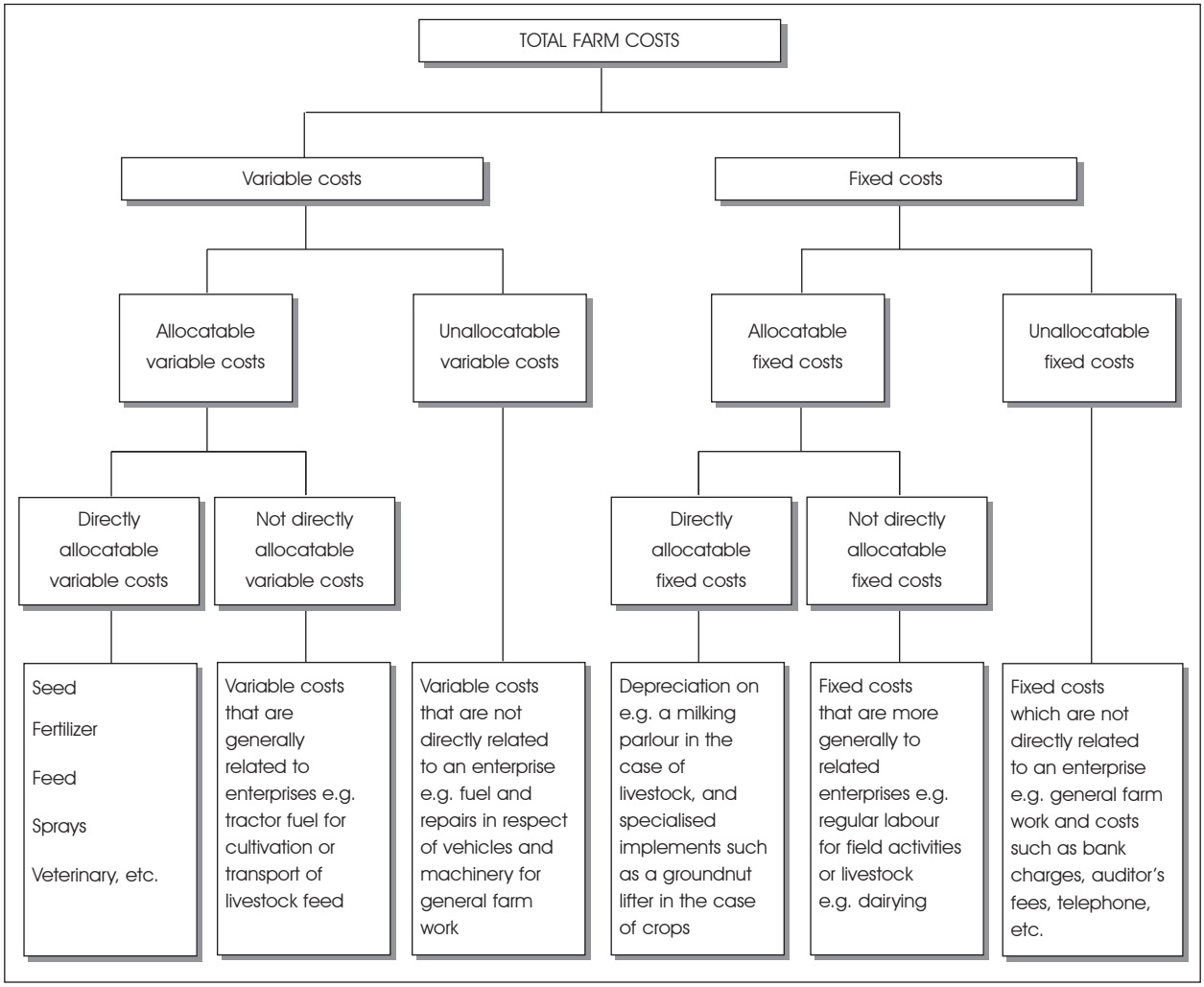

DIAGRAM 4. Input terms in respect of farm enterprises (with examples for the different cost categories)

3. ECONOMIC AND FINANCIAL TERMS

The following terms are used to describe the various levels of economic and financial surpluses resulting from the deduction of certain inputs from output. Some are applicable at the enterprise level and some at the whole-farm level.

3.1 **Gross margin** (GM) of an enterprise is the enterprise gross production value *less* directly allocatable variable costs. The specific variable cost items included will depend on the purpose of the calculation and the practical feasibility of the allocation. Therefore cost items included must be specified.

3.2 **Gross margin of a grazing livestock enterprise** is the particular enterprise's gross production value *less* the directly allocatable variable costs including that portion of a forage crop's directly allocatable variable costs.

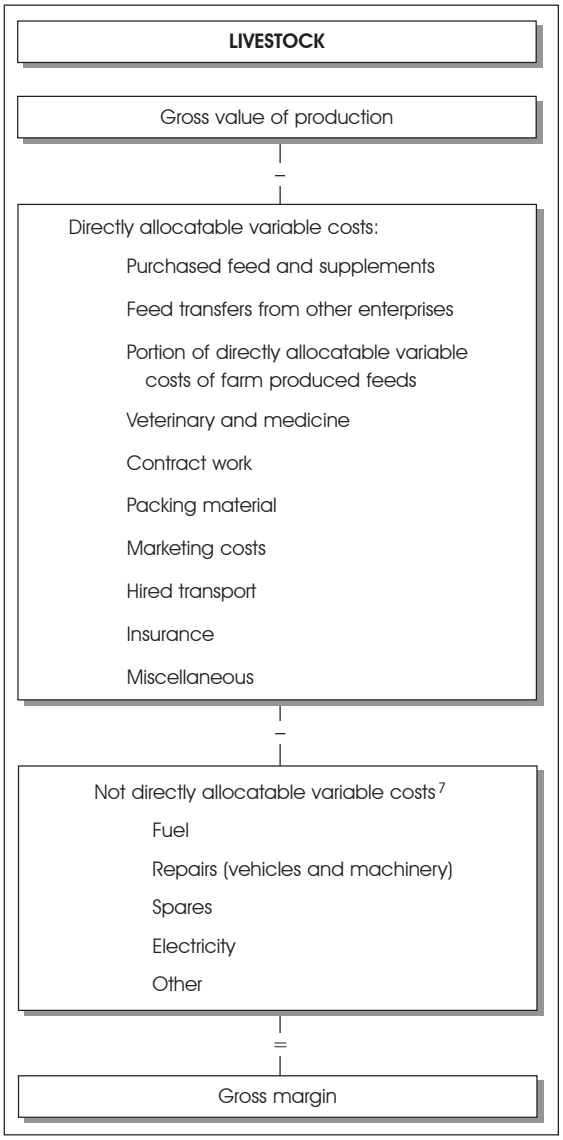

DIAGRAM 5 – Determination of the gross margin of a livestock enterprise

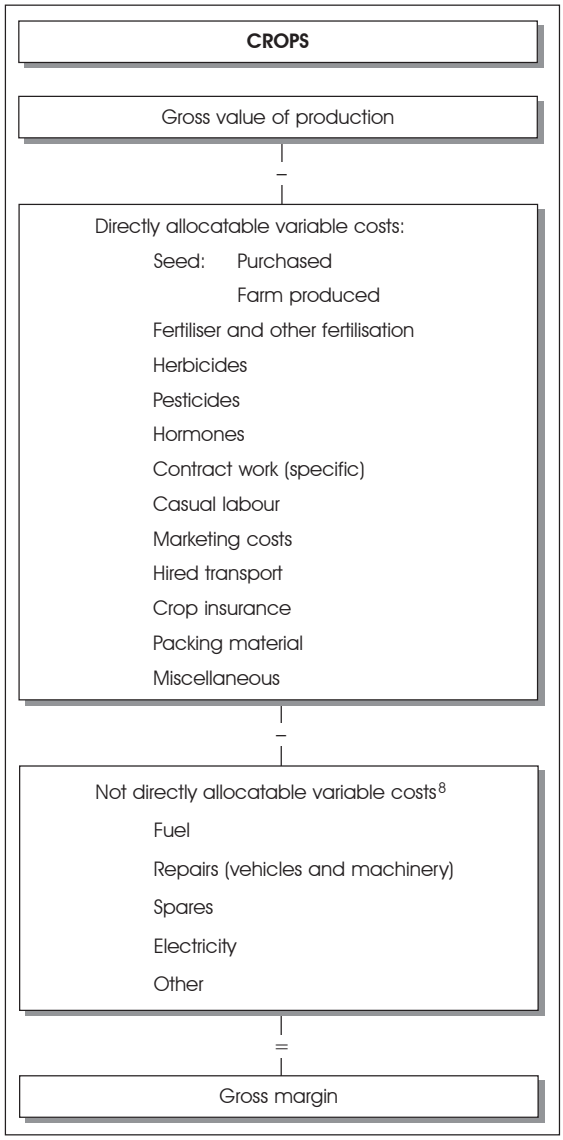

DIAGRAM 6 – Determination of the gross margin of a crop enterprise

7 If practical

8 If practical

3.3 **Gross margin of a cash cropping enterprise** is the particular enterprise's gross production value *less* the directly allocatable variable costs

3.4 **Pasture or forage crop** is the sum of the grazing livestock enterprise's gross margins (before deduction of forage crop variable costs) *plus* sundry revenue from grazing let and occasional sales of fodder e.g. hay[9] together with an adjustment for significant changes in the valuation of stocks of farm-produced fodder, *less*:

- the allocatable variable costs of pasture and other forage crops; and
- unallocatable purchased roughages and hired grazing.

3.5 **Total Gross Margin** is the sum of the gross margins from all cash crop and livestock enterprises.

3.6 **Total Farm Gross Margin** is the total gross margin *plus* sundry farm income, or the gross value of production of the farm *less* the sum of the directly allocatable variable costs of all the enterprises on the farm *plus* sundry farm income.

3.7 **Margin above specified costs** is obtained if deductions are made from the gross production value e.g. margin above feed costs.

3.8 **Net farm income** (NFI) can be defined as the return related to:

(a) land (own and hired)

(b) capital (own and borrowed)

(c) management (own and hired; own and unpaid family labour)

Net farm income per unit such as per hectare cultivated or per R100 capital invested is a generally accepted comparable efficiency measure between different farming units irrespective of ownership, debt burden, extent or composition of the enterprise.

NFI is calculated as follows:

(a) Gross farm income less total farm costs[10].

In the traditional accounting system of an individual farming enterprise, net farm income is purely an accounting residual (usually positive) between the items mentioned above.

(b) Total farm gross margin *less* overhead costs (excluding remuneration to management, interest on capital and lease or rental on land)

If all the above factors were remunerated at a predetermined rate, then a residual value would result (positive or negative) which could be described as the innovator's profit or loss (see paragraph 3.10).

3.9 **Farm Profit or Loss** can be defined as the remuneration to own land, capital and management (including own and unpaid family labour) and can be calculated as follows:

Net farm income *less* payment for hired land and management and payment for borrowed capital[11].

3.10 **Innovator's Profit or Loss** is the residual value that may result if all production factors are fairly remunerated at a predetermined rate.

3.11 **Return to Own Management**[12] can be calculated as follows:

Farm profit *less* imputed interest and rent on own capital and land.

3.12 **Return on Total Capital** (including land) can be calculated by subtracting a fee for hired and own management[11] from net farm income.

3.13 **Return on Own Capital** (including land) can be calculated by deducting a fee for own management[11] from farm profit, or by deducting a fee for borrowed capital from return to total capital.

3.14 **Disposable Income** is the cash available for further investment. The net disposable income is obtained by deducting family expenditure and investments made during the year from disposable income.

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9 Where sales of seeds or fodders crops such as hay, are a regular prt of farm policy, they should be regarded as cash crop enterprises

10 Internal transfers are ignored

11 Remuneration to borrowed capitals is rent and share crop payments on land and interest and finance charges.

12 Remuneration for own management includes unpaid family labour, own labour and own management

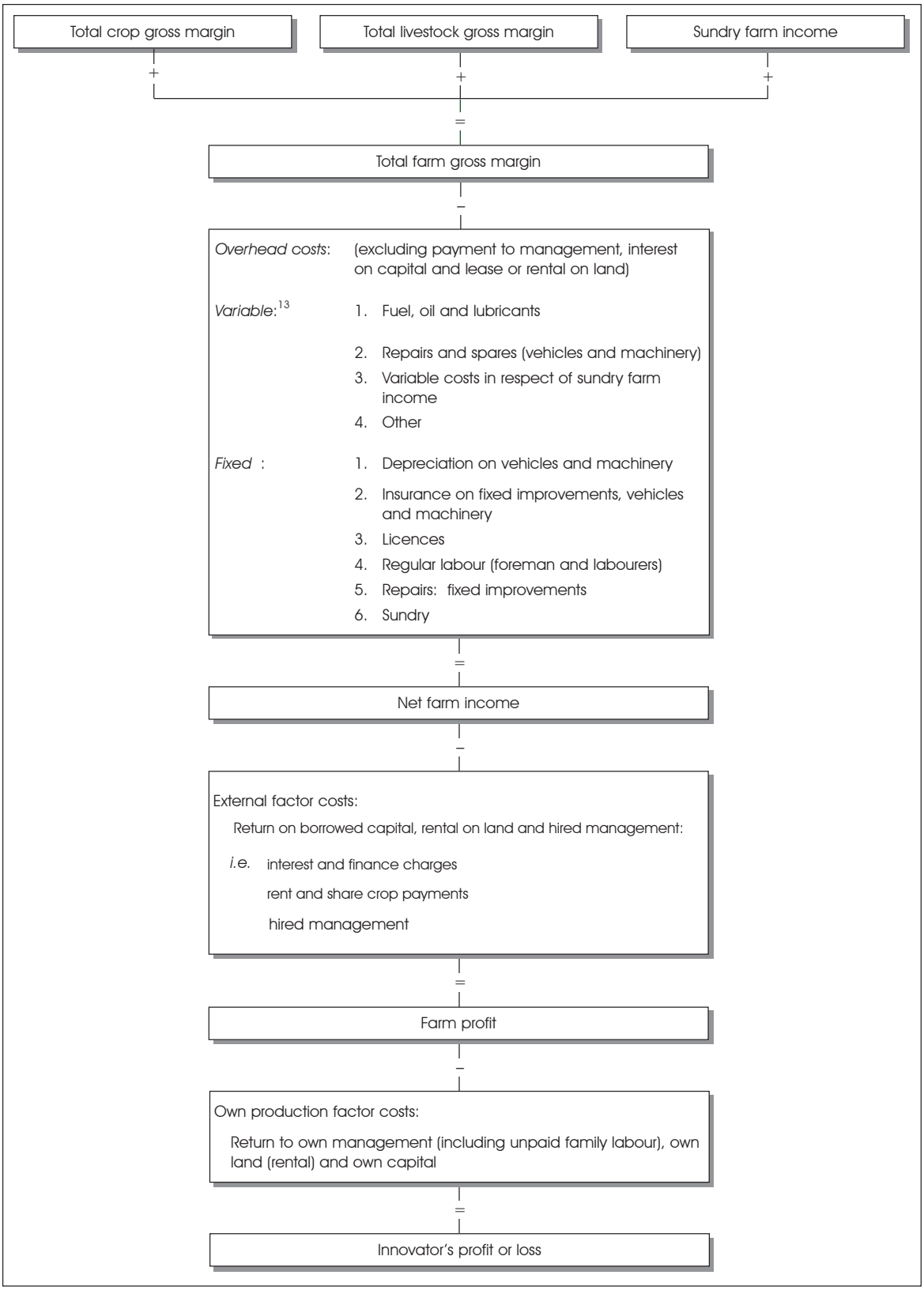

DIAGRAM 7. Determination of net farm income, net farm profit and innovator's profit or loss

13 Only variable costs that have not been included in the calculation of gross margins

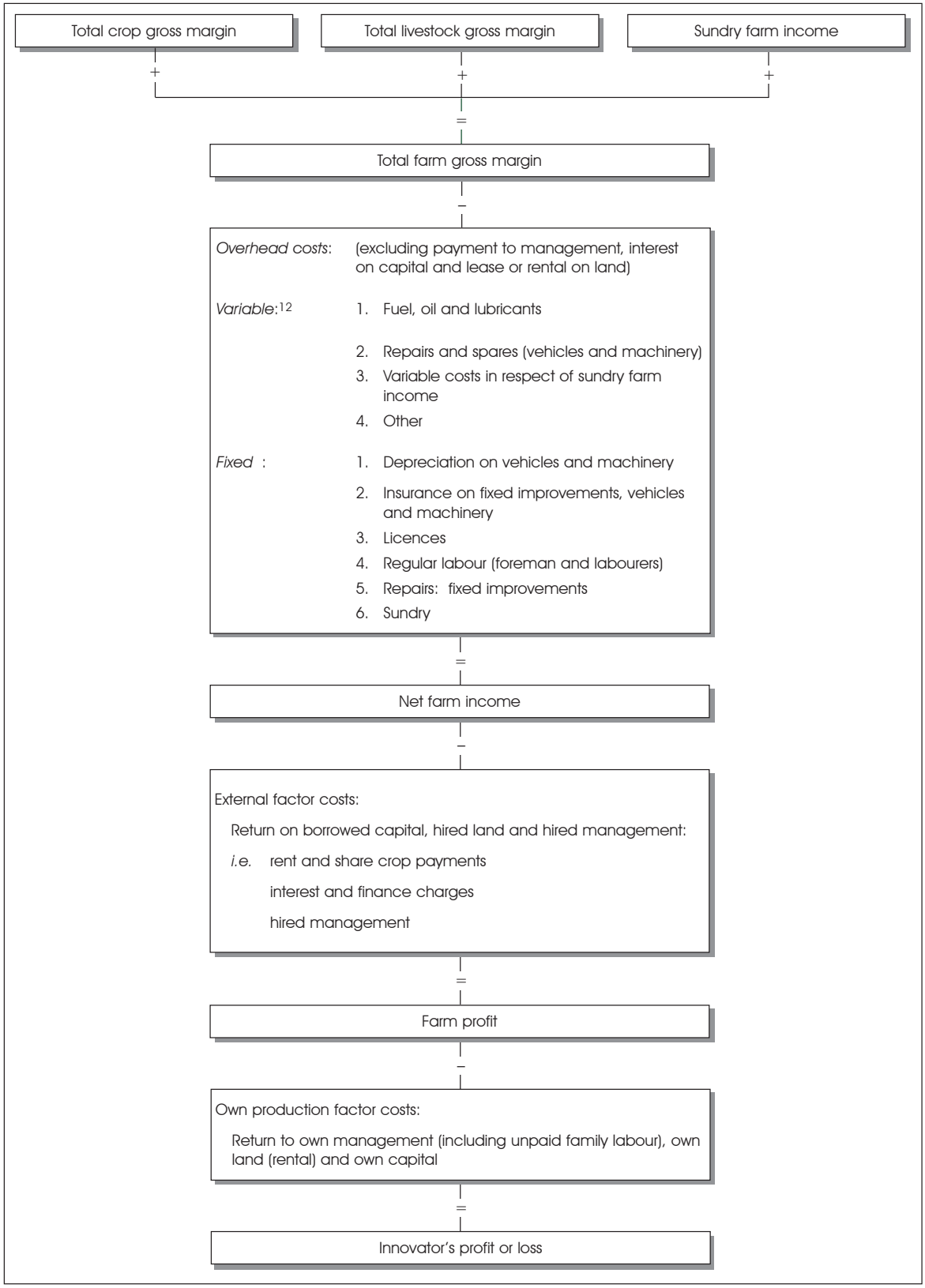

DIAGRAM 7. Determination of net farm income, net farm profit and innovator's profit or loss

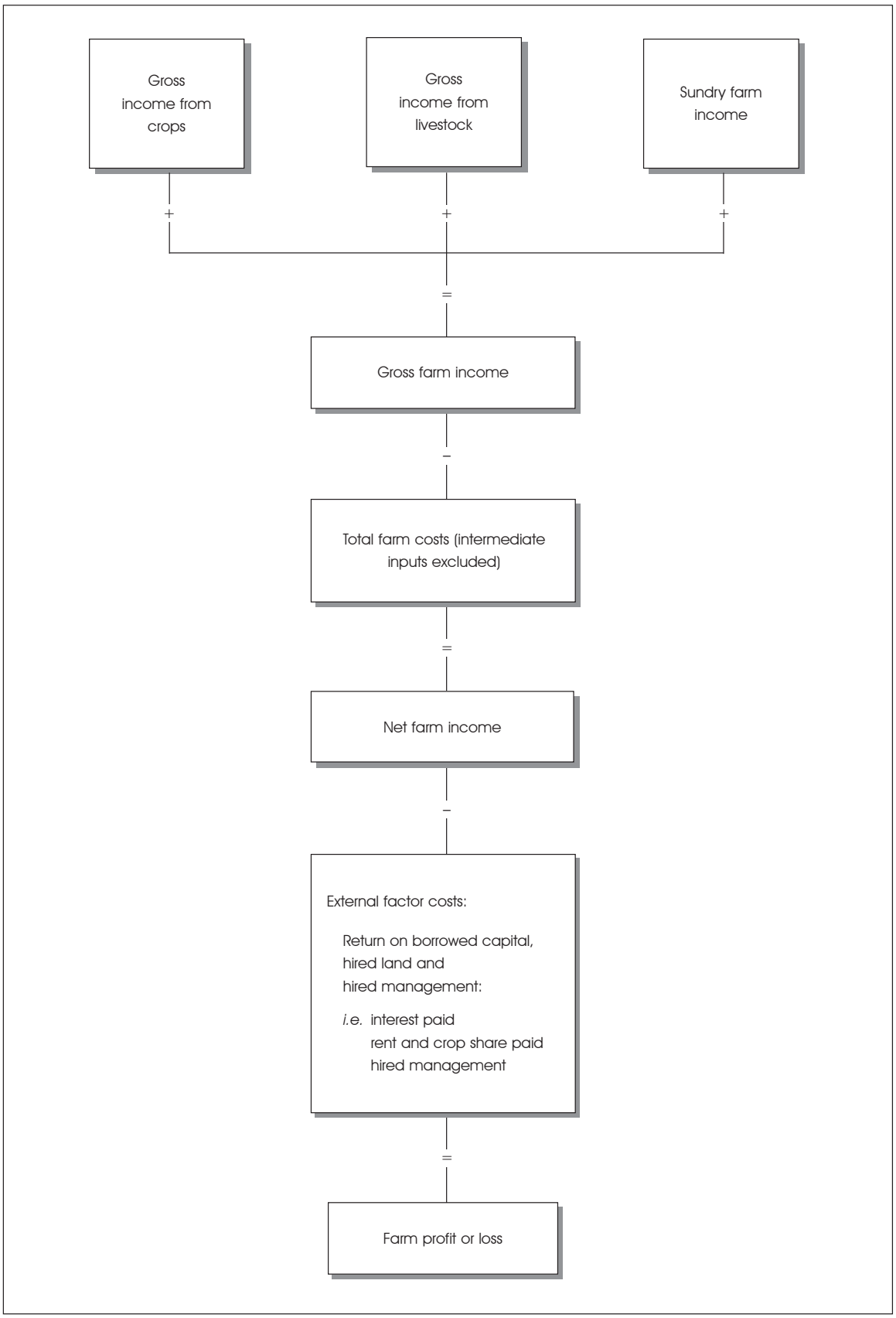

DIAGRAM 8. Calculation of net farm income and farm profit or loss for analysis purposes

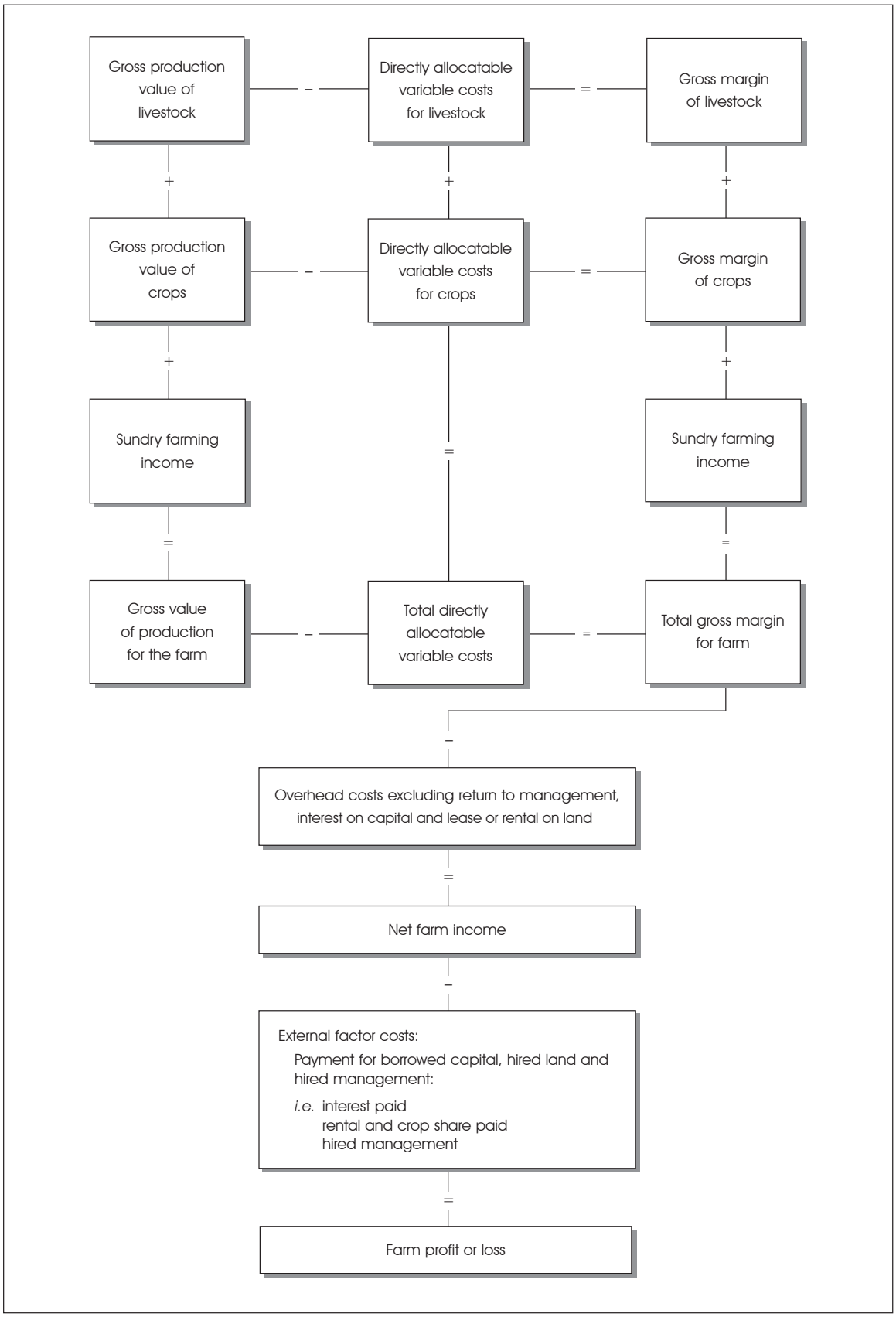

DIAGRAM 9. Summary of alternative ways to calculate farm profit or loss

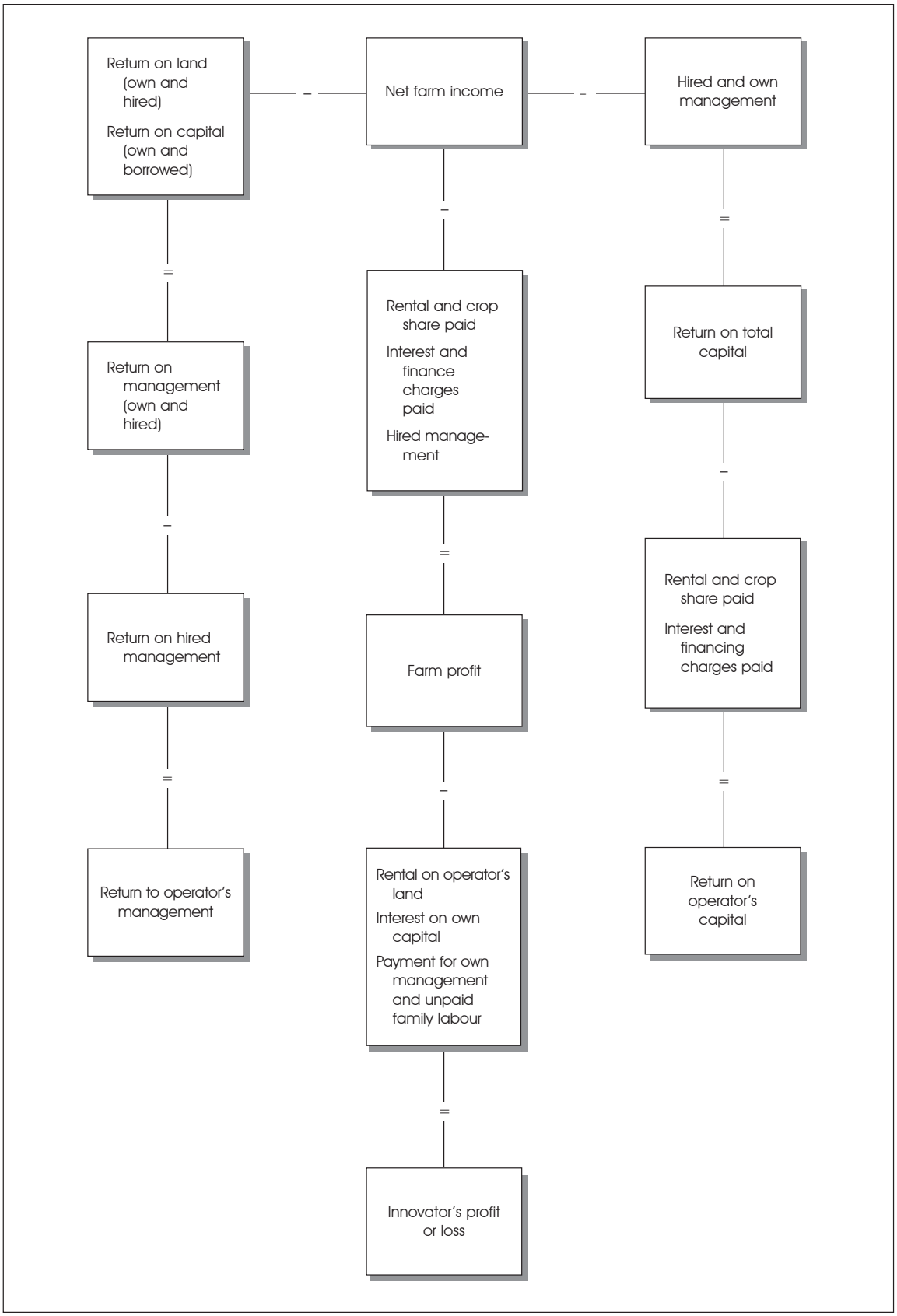

DIAGRAM 10. The determination of certain profit and return factors

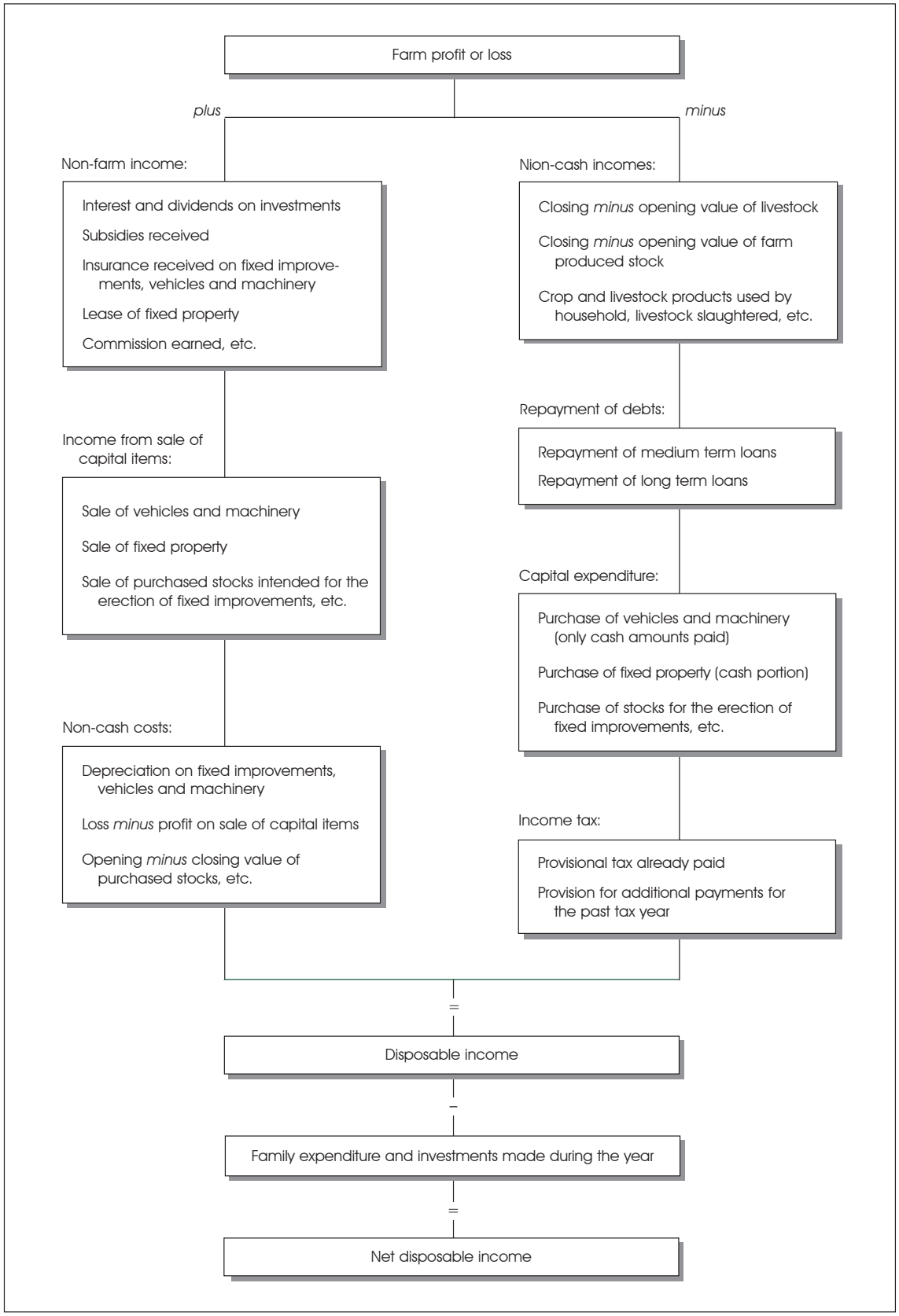

DIAGRAM 11. The determination of disposable income and net disposable income

4. SOME TERMS USED IN FARM ANALYSES

4.1 **Land** includes all natural resources such as agricultural land, water resources, climate, etc. necessary to produce agricultural products.

4.1.1 Total area encompasses the total area of the farm in hectares and includes crops, cultivated pastures and natural grazing, plantations, orchards, building areas, farmyard, wasteland, roads, etc. It includes own land, hired land and share cropped land.

4.1.2 When per unit area efficiency measures are used, the area base should be clearly stated, i.e. per hectares cultivated or per hectares grazed.

4.1.3 Agricultural utilisable area (AUA) comprises the area of crops, pasture and natural grazing (excluding buildings, farmyard, waste, roads, etc.).

4.1.4 Area cultivated is the sum of drylands, irrigated lands, orchards and plantations.

4.2 **Forage crops** are all crops planted on the farm specifically for livestock, excluding crops harvested as grain and green manure crops.

4.2.1 **Forage crop area** is the area of all forage crops grown on the farm specifically for livestock use.

4.3 **Livestock units** are based on estimated energy requirements. Standard ratios are used for converting animals of different species and ages into livestock units.

4.3.1 **Grazing livestock units** are the livestock units of livestock.

4.4 **Industry** in the agricultural sector refers, for example, to the maize industry, wheat industry, wool industry and therefore relates to the national level.

4.4.1 **Enterprise** in farming refers to the maize enterprise, wheat enterprise, wool/sheep enterprise, etc. It there- fore relates to the farm level.

4.5 **Vehicles and machinery**

4.5.1 **Machinery** includes power driven machinery, implements and equipment.

4.5.2 **Vehicles** include cars, LDVs, trucks, aircraft, motorbikes, etc.

4.6 **Labour** refers largely to the physical and, to a lesser extent, mental work of persons in the production process.

4.6.1 **Labour requirements** may be expressed as man days, standard man days, hours or minutes and may be quoted per hectare, per large stock unit, time period or season, etc.

4.6.2 **Standard man-day** represents 8 hours of effective work by an adult worker under average conditions.

4.6.3 **Annual labour units** are the estimated number of full-time workers on a farm. One annual unit represents the activity of a person working normal full-time hours throughout the year. Part-time workers and non-adult labour are converted to full-time equivalents in proportion to their actual working time.

4.7 **Management** is primarily the mental work of the person concerned with decisionmaking, planning, organisation and controlling of a farm and, to a lesser extent, with the physical work involved in the production process.

4.8 **Hired employees**

Functions consist of:

(a) physical labour

(b) supervisory functions and

(c) management function.

Remuneration to (a) and (b) is remuneration to labour. Remuneration to (c) is remuneration to hired management.

Where the above functions are the responsibility of one individual, it is desirable to allocate the remuneration realistically between labour remuneration and hired management.

4.9 **Capital** not only includes money, but also includes all those goods that the entrepreneur uses in the production process, for example, fixed improvements, vehicles, machinery and equipment. Total capital can be divided into own and borrowed capital.

4.9.1 **Average capital employed** = (opening capital + closing capital) ÷ 2

4.9.2 **Fixed capital** is capital invested in durable assets that are by nature long term.This capital cannot readily be liquidated. Examples are fixed improvements, and capital invested in land, including vineyards, orchards and plantations.

4.9.3 **Movable capital** is capital invested in assets that are by nature medium term and do not usually undergo any changes in the production process, such as livestock, vehicles and machinery.

4.9.4 **Working capital** is normally of a short-term nature and is usually only involved in the production process during a single year or production season. It is normally exhausted within one year (production season) and includes items such as feed, fertilizer, seed, fuel, and the capital required to pay wages, repairs, contract work and transport.

4.9.5 **Directly productive capital** includes those capital items directly responsible for generating income, such as land, livestock and orchards.

4.9.6 **Indirectly productive capital** includes those items not directly responsible for generating income, for example, fixed improvements, vehicles and machinery.

4.9.7 **Establishment capital of perennial crops** is capital invested in assets that have a productive life longer than one year, i.e. costs occurred in the establishment and maintenance of perennial crops during the non- bearing period (normally until a positive gross margin is realised). This includes planting material, trellising, basic fertilizers, overhead and underground irrigation equipment, capital invested in the initial conservation and drainage works responsible for increasing the value of virgin land.

4.10 **Cash flow** is the movement of funds through the business during a specific period and is represented by receipts and payments.

4.10.1 **Net cash flow** is the difference between cash receipts and payments over a given period. Three categories of cash flow can be distinguished.

4.10.1.1 **Net trading cash flow** is the net flow of funds relating to the trading activities of the business. It is the difference between cash receipt and cash payment items that are included in the trading and profit and loss account.

4.10.1.2 **Net capital cash flow** is the net flow of funds relating to items of a capital nature usually found in the business balance sheet.

4.10.1.3 **Net personal cash flow** is the net flow of funds relating to the non-farm cash receipts and payments. These include funds withdrawn for personal use and income tax payments, and also income received from non-farm sources.

4.11 **Turnover** represents the total trading receipts for the accounting period.

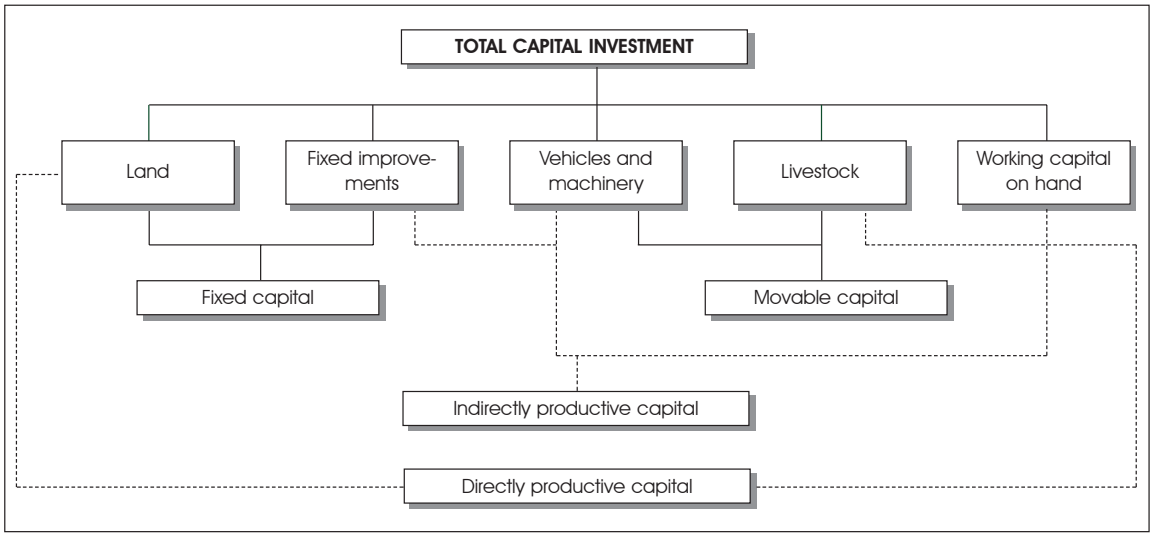

DIAGRAM 12. Composition of total capital investment in farming

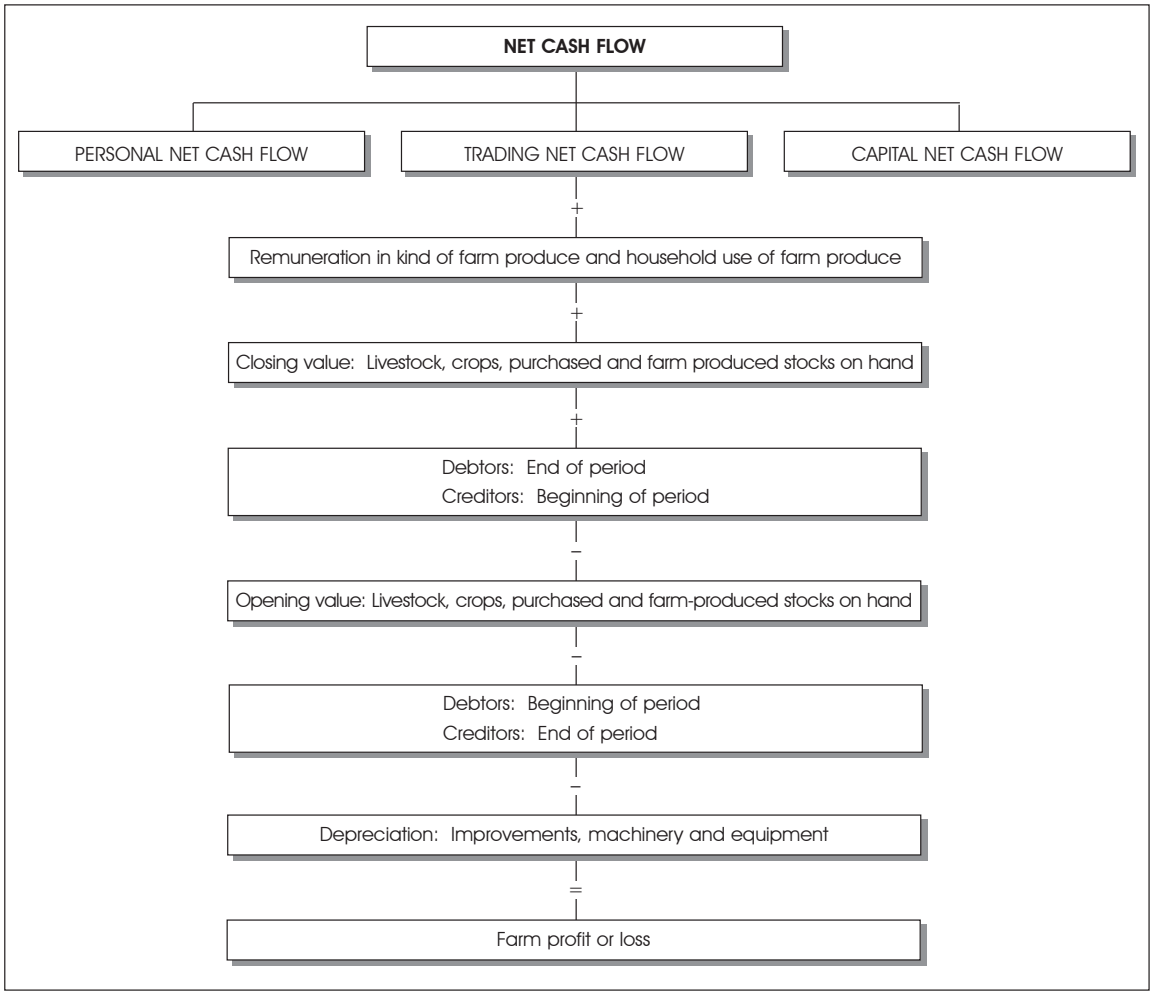

DIAGRAM 13. Relationship between cash flow and farm profit or loss

5. FARM ACCOUNTS

5.1 The **income statement** (profit and loss account) records the financial transactions and the resulting farm profit or loss for the accounting period, normally one year. It includes an opening valuation of livestock, crops, purchased and farm-produced stocks at the beginning of the period; the costs and revenue for the same period; and a closing valuation of livestock, crops, purchased and farm produced stocks at the end of the period.

5.2 **The balance sheet**: The account of transactions in a particular period are often supplemented by a **balance sheet** showing the assets and liabilities of the business at a specific point in time, usually the last day of the accounting period. In a balance sheet prepared in conjunction with an income statement, valuations in each should be consistent. Land is normally entered in the balance sheet at the historical cost. However, for management purposes it may be desirable to prepare an additional balance sheet where all assets are valued at current market values. Any apparent gains or losses between successive balance sheets arising as a result of this revaluation may be shown separately.

5.2.1 **Liabilities** are the total value of claims on the assets of a business by the various suppliers of funds to it.

5.2.2 **Total liabilities** comprise long-term and medium-term liabilities, current liabilities and net worth (owner's equity).

5.2.3 **Long-term and medium-term liabilities** are loans, mortgages and other debts not liable to early recall under normal circumstances. Examples include Land Bank mortgage loans, bank loans (not overdrafts) and private family loans (whether interest bearing or not) and hire purchase controls exceeding 1 year.

5.2.4 **Current liabilities** are claims on the business that may have to be met within a short period of time, usually not longer than a year. Examples include sundry creditors, bank overdraft and short-term loans[14].

5.2.5 **Net worth (or owner's equity)** is the balance sheet value of assets available to the owner of the business after all other claims against these assets have been met. The change in net worth between successive balance sheets will include adjustments for profit (or loss) for the specific year, personal funds introduced (excluding loans) and withdrawals for personal expenditure, taxes paid and off-farm investments.

5.2.6 **Assets** are anything of value in the possession of the business or claims on anything of value in the posses- sion of others. In the valuation of the assets of a business, several methods can be used e.g. historical cost, depreciated value, current market value, and cost of production.

5.2.7 **Total assets** are usually considered under three headings, fixed, movable and current assets.

5.2.8 **Fixed assets** are durable assets representing relatively long-term investments that are used for more than one production cycle. Examples are land and buildings (long-term).

5.2.9 **Movable assets** (intermediate assets) consist of resources or production items with a useful life of one to ten years. Most of these are used to support production. They do not include assets expected to be sold or converted into cash within the year. Examples are breeding livestock and machinery.

5.2.10 **Current assets** are usually subdivided into two parts:

1. Physical working assets comprising temporary assets that can normally be converted into cash within a short time (generally a year or less). Examples are marketable livestock and stocks on hand.

2. Liquid assets comprising the value of cash either on hand or in the bank, pre-payments and "near cash" assets such as sundry debtors.

5.2.11 **Net current assets** are total current assets *minus* total current liabilities.

14 Ensure that it does not already include a portion of long-term and medium-term loans

BALANCE SHEET OF A FARMER AS AT 31 DECEMBER 1982

ASSETS		**LIABILITIES**	
Current assets		**Current liabilities**	
Cash: On hand	X	Outstanding cheques	X
In bank	X	Bank overdraft	X
Stock on hand:		Provision for income tax	X
Produce reaped	X	Sundry creditors	X
Unreaped produce	X	Short-term commitments on medium and long-term liabilities	X
Production inputs	X	Subtotal (G)	XX
Sundry debtors	X		
Marketable livestock	X	**Medium-term liabilities**	
Advance and supplementary payments	X	Hire purchase contract	X
Subtotal (A)	XX	Leasing contract	X
		Subtotal (H)	XX
Payments in advance			
Hire purchase interest	X	**Long-term liabilities**	
Lease payments	X	Mortgage loans	X
Subtotal (B)	XX	Land Bank	X
		Subtotal (I)	XX
Investments		**Total liabilities (J=G+H+I)**	**XXX**
Co-operative levy fund	X	**Net worth (F–J)**	**X**
Deferred bonus on member's fund	X	**Total liabilities + net worth**	**XXX**
Subtotal (C)	XX		
Moveable assets			
Breeding livestock	X		
Dairy herd and sheep flock	X		
Machinery (hire purchase items included)	X		
Subtotal (D)	XX		
Fixed assets			
Fixed improvements	X		
Land (own)			
Farmed on	X		
Hired (L)	X		
Subtotal (E)	XX		
Total assets (F=A+B+C+D+E)	**XXX**		
Value of rented land (K)	X		
Total capital employed (M=F+K-L)	**XXXXX**		

DIAGRAM 14. The balance sheet

FINANCIAL RATIOS

1. INCOME INVESTMENT RATIOS

1.1 Operator's earnings (Ro):

$$\frac{\text{NFI}}{\text{Total capital employed}} \times \frac{100}{1}$$

1.2 Return on total capital (Rk):

$$\frac{\text{NFI} - \text{Management salaries (own + hired)}}{\text{Total capital}} \times \frac{100}{1}$$

1.3 Return on own capital (Re):

$$\frac{\text{NFI} - \text{Cost of own management} - \text{Interest on borrowed capital}}{\text{Own capital}} \times \frac{100}{1}$$

2. SOLVENCY RATIOS

2.1 Capital ratios

2.1.1 Net capital ratio:

$$\frac{\text{Total assets}}{\text{Total liabilities}}$$

2.1.2 Leverage ratio:

$$\frac{\text{Borrowed capital}}{\text{Own capital}}$$

2.2 Debt ratio (Gearing ratio):

$$\frac{\text{Borrowed capital}}{\text{Total assets}} \times \frac{100}{1}$$

2.3 Financial leverage factor:

$$\frac{\text{Re (Own capital)}}{\text{Rk (Total capital)}} = \frac{\dfrac{\text{NFI} - \text{Cost of own management} - \text{Interest on borrowed capital}}{\text{Own capital}}}{\dfrac{\text{NFI} - \text{Management salaries (own + hired)}}{\text{Total capital}}}$$

3. LIQUIDITY RATIOS

3.1 Current ratio:

From balance sheet:

$$\frac{\text{Current assets}}{\text{Current liabilities}}$$

From income statement:

$$\frac{\text{Variable costs}}{\text{GFI}}$$

3.2 Acid test ratio:

$$\frac{\text{Current assets} - \text{stocks}}{\text{Current liabilities}}$$

3.3 Cash ratio:

$$\frac{\text{Cash}}{\text{Current liabilities}}$$

3.4 Fixed cost ratio:

$$\frac{\text{Total fixed costs}}{\text{Gross farm income}}$$

3.5 Total cost ratio:

$$\frac{\text{Total farm costs}}{\text{Gross farm income}}$$

4. OTHER EFFICIENCY RATIOS

4.1 NFI per R100 capital investment:

$$\frac{\text{Net farm income}}{\text{Average capital investment}} \times \frac{100}{1}$$

4.2 Capital turnover ratio:

$$\frac{\text{Gross farm income}}{\text{Total capital investment}}$$ (Express in terms per annum)

4.3 Capital turnover ratio of total assets:

$$\frac{\text{Gross farm income}}{\text{Total assets}}$$ (Express in terms per annum)

4.4 Capital turnover ratio of fixed assets:

$$\frac{\text{Gross farm income}}{\text{Fixed assets}}$$ (Express in terms per annum)

4.5 Capital turnover ratio of current assets:

$$\frac{\text{Gross farm income}}{\text{Current assets}}$$ (Express in terms per annum)

4.6 Growth of the undertaking:

$$\frac{\text{Own capital at end of year 2} - \text{own capital at end of year 1}}{\text{Own capital at end of year 1}} \times \frac{100}{1}$$

Proposed acronyms

DAFC	Directly allocatable fixed costs
DAVC	Directly allocatable variable costs
E Cap	External capital
FC	Fixed costs
FL	Farm loss
FP	Farm profit
GFI	Gross farm income
GI	Gross income
GM	Gross margin
GM(C)	Gross margin of crops
GM(L)	Gross margin of livestock
GVFP	Gross value of farm production
GVP	Gross value of production
GVP(C)	Gross value of production (crops)
GVP(L)	Gross value of production (livestock)
NAFC	Not directly allocatable fixed costs
NAVC	Not directly allocatable variable costs
NFI	Net farm income
O Cap	Own capital
RHM	Return to hired management
ROM	Return to own management
SFI	Sundry farm income
T Cap	Total capital
TC	Total costs
TFaC	Total factor cost
TFarC	Total farm costs
TFGM	Total farm gross margin
TGM	Total gross margin
TRM	Total return to management
UAFC	Unallocatable fixed costs
UAVC	Unallocatable variable costs
VC	Variable costs