CASE STUDIES AND EXAMPLES OF THE ACCOUNTING TREATMENT PRESCRIBED FOR BIOLOGICAL ASSETS AND AGRICULTURAL PRODUCTS BY IAS 41 *AGRICULTURE* - second part case studies -

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Abstract. *The study theoretically and practically presents the accounting treatment prescribed for biological assets and agricultural produce by the Romanian Accounting Regulations compliant with the International Financial Reporting Standards (IFRS), by IAS 41 Agriculture, or other applicable standards, such as IAS 2 Inventories, for agricultural produce after the harvest. Thus, the initial valuation and the post-recognition one are treated based on the fair value reliably measured less the costs to sale.*

The study includes a theoretical part that summarizes the basic notions from IAS 41 Agriculture, such as consumable and bearer biological assets (in the form of inventories), mature and immature, the lands to which they are connected, the bearer plants, the gains and losses from their valuation at the fair value, the specific government grants and the disclosures. As well as a practical part in which case studies are presented in the form of complex examples regarding the prescribed treatment and the entering in the accounts of the transactions with biological assets, based on the Chart of Accounts of the Romanian Accounting Regulations compliant with the IFRS.

Keywords: *agricultural activity, biological assets, bearer plants, fair value, cost to sale, arising from changes in the fair value*

Clasificare JEL : *M41; M40; M 48; M 49.*

1. (4.)[1] Case studies on the treatment and accounting for transactions in biological assets, agricultural produce, bearer plants, agricultural land and government subsidies under IFRS[2] [23], [24]

Example 1. *Recognition and measurement at fair value of a mature bearer biological asset*

An entity carrying out agricultural activities purchased in January of year N, 500 mature sheep (to produce milk, wool, lambs), unit cost 510 lei / piece, total cost 255,000 lei. The costs generated by the acquisition (commissions for brokering the acquisition) of the flock of sheep on that market are in percentage of 5% of the unit cost, i.e. 12,750 lei. The purchase cost / sale price can be considered a good estimate of the fair value of this asset in a main active market. If the entity decides to sell the sheep in the next period, on another main active market it must pay sales costs (commissions for brokering the sale) in the percentage of 2.90% of the unit selling price of 618 lei / piece, i.e. approximately 9,000 lei.

At the end of year N, the entity measures the flock of sheep at its fair value, the unit selling price is 650 lei / piece, and the costs to sell are 3% of the unit selling price, i.e. 9,750 lei.

In October N + 1, the entity sells 300 sheep, with a unit price of 700 lei / piece and pays costs to sell in a percentage of 2% of the unit selling price, i.e. 4,200 lei.

[1] Numbering continued first part theory.

[2] The accounting entries are made on the basis of the *Chart of Accounts from the Romanian Accounting Regulations compliant with IFRS* (O.M.F.P. no. 2844/2016).

We do not account for VAT or other due taxes.

Fair value is *the price that would have been charged for the sale of an asset (...) in a regulated transaction between market participants at the measurement date.* (IFRS 13.9/IAS 41.8)

The proposed accounting entries are:

a) recognition and initial measurement in January year N:

a.1) entry and payment of commissions for brokering the acquisition:

12,750 lei	**622**	**=**	**401/5121**	**12,750 lei**
	Commissions and fees		*Suppliers / Cash at bank in lei*	

a.2) entry of the acquisition from the supplier of the bearer biological asset – Flock of sheep (IAS 41.12 and 26):

255,000 lei	%	**=**	**404/5121**	**255,000 lei**
246,000 lei	**2411**		*Suppliers of non-current assets / Cash at bank in lei*	
	Bearer biological assets measured at fair value / Flock of sheep			
9,000 lei	**6571**			
	Losses from the fair value measurement of bearer biological assets			

a.3) entering the gain on initial recognition of the bearer biological asset (IAS 41.26):

Measurement gains: 54,000 lei (300,000 lei (500 sheep x 618 lei – 9,000 lei) – 246,000 lei).

54,000 lei	**2411**	**=**	**7571**	**54,000 lei**
	Bearer biological assets measured at fair value / Flock of sheep		*Gains from the fair value measurement of bearer biological assets*	

b) measurement at the end of the reporting period (year) N of the bearer biological asset (IAS 41.12):

Measurement gains: 15,250 lei (315,250 lei (500 sheep x 650 lei – 9,750 lei) – 300,000 lei (246,000 lei + 54,000 lei)).

15,250 lei	**2411**	**=**	**7571**	**15,250 lei**
	Bearer biological assets measured at fair value / Flock of sheep		*Gains from the fair value measurement of bearer biological assets*	

c) entering the sale of the bearer biological asset in October N + 1:

c.1) entry and payment of commissions for brokering the sale:

4,200 lei	**622**	**=**	**401/5121**	**4,200 lei**
	Commissions and fees		*Suppliers/ Cash at bank in lei*	

c.2) entry and collection of the selling price of the bearer biological asset:

210,000 lei	**461/ 5121**	**=**	**7573**	**210,000 lei**
	Sundry debtors / Cash at bank in lei		*Revenue from the disposal of bearer biological assets*	

c.3) writing off the bearer biological asset sold:

The value of the sold biological asset: 189,150 lei (315,250 lei / 500 sheep x 300 sheep).

189,150 lei	**6573**	**=**	**2411**	**189,150 lei**
	Transfer of bearer biological assets		*Bearer biological assets measured at fair value / Flock of sheep*	

Remark. The remaining flock of sheep (the balance of the account **2411** *Bearer biological assets measured at fair value*) is 200 heads worth 126,100 lei. *The measurement at fair value less costs to sell will be made at the end of the reporting period (year) N + 1.*

Example 2. *Recognition and measurement at fair value of a (supplementary) (immature and mature) inventory-like biological asset and the harvested agricultural produce*

An entity that carries out agricultural activities owns in October N + 1 a flock of sheep in number of 200 heads measured at a fair value less the costs to sell in total value of 126,100 lei (630.50 lei / head).

At the end of N + 1, the entity measures the flock of sheep at its fair value, the unit selling price is 700 lei / piece, and the costs to sell are 2% of the unit selling price, i.e. 2,800 lei.

In February N + 2, 300 living lambs are born. In May N + 2, according to the decision of the entity's management, the following operations will take place: 150 lambs will be sold live with the price of 350 lei / piece, and the costs to sell are 5%, 50 lambs of 18 kg each will be slaughtered in their own slaughterhouse and sold as carcass with the price of 25 lei / kg, and the costs to sell are 5%, 100 lambs will remain in the flock of sheep to become bearer biological assets.

During the month of May N + 2 from the 200 sheep a quantity of 2,000 kg of wool is harvested, the selling price on a main active market being of 1 leu / kg, and the costs to sell are 10%, i.e. 200 lei. The harvested wool is sold in June with the price of 0.80 lei / kg.

During May N + 2 from 180 female sheep that gave birth to lambs is harvested daily the amount of 375 liters of milk, the selling price on a main active market is of 3 lei / liter, and the costs to sell are 225 lei / day (we assume that there are transport expenses made with own means of transportation). The milk is subsequently sold to a local processor at a price of 3 lei / liter.

In June N + 2 the entity decides to use the milk milked from sheep to obtain some types of telemea (cheese). Thus, the daily quantity of milk is 300 liters, the selling price on a main active market has increased to 4 lei / liter, and the costs to sell are estimated at 150 lei. From processing the milk the quantity of 90 kg of sheep telemea – finished produce is obtained, measured at the unit production cost of 25 lei / kg, information obtained within the management accounting, through specific procedures and techniques, the total cost being in the amount of 2,250 lei (90 kg x 25 lei / kg). Subsequently, the quantity of 50 kg of sheep telemea is sold – finished produce, with a unit price of 40 lei / kg.

At the end of N + 2, the entity measures the flock at its fair value, the unit selling price of bearer biological assets and inventory-like biological assets biologically transformed as a result of the ability of modification is 650 lei / piece, and the costs to sell are 2% of the unit selling price. Of the inventory-like biological assets biologically transformed stocks and as a result of measuring the change, 80 heads meet the standards to be considered bearer biological assets.

In October N + 7, as a result of the degeneration of a part of the flock of sheep, the entity decides to slaughter 120 mature sheep and capitalize on the resulting carcasses and skins. Thus, it 4,850 kg carcass result from the slaughter, unit selling price of 40 lei / kg and 120 pcs. raw skins, unit selling price of 100 lei / piece, and the costs to sell are 5% of the unit selling price. The resulting sheep carcasses and raw skins are sold as resulting agricultural produce at measurement prices. We disregard subsequent measurements at the end of the reporting periods of bearer biological assets at fair value less costs to sell up to the date of derecognition.

We do not account for VAT or other due taxes.

The proposed accounting entries are:

a) measurement at the end of the reporting period (year) N + 1 of bearer biological assets (IAS 41.12):

Measurement gains: 11,100 lei (137,200 lei (200 heads x 700 lei – 2,800 lei) – 126,100 lei).

11,100 lei	**2411**	**=**	**7571**	**11,100 lei**
	Bearer biological assets measured at fair value / Flock of sheep		*Gains from the fair value measurement of bearer biological assets*	

b) entry in February N + 2 of the 300 live-born lambs in the form of immature inventory-like biological assets measured at fair value (IAS 41.12):

Value at initial recognition:99,750 lei(105,000 lei (300 lambs x 350 lei / piece)–5,250 lei) (105,000 lei x 5%)).

99,750 lei	**3611**	**=**	**7572**	**99,750 lei**
	Inventory-like biological assets measured at fair value / Living lambs		*Gains from the fair value measurement of inventory-like biological assets*	

Remark. For the above entry, the following option may be used as well, in our opinion not recommended, but permitted by IAS 41.26:

105,000 lei	**%**	**=**	**7572**	**105,000 lei**
99,750 lei	**3611**		*Gains from the fair value measurement of inventory-like biological assets*	
	Inventory-like biological assets measured at fair value / living lambs			
5,250 lei	**6572**			
	Losses from the fair value measurement of inventory-like biological assets			

c) sale of 150 living lambs in May N + 2:

c.1) entry and payment of commissions for brokering the sale of the living lambs – inventory-like biological assets: 2,625 lei (150 lambs x 350 lei / piece x 5%):

2,625 lei	**622**	**=**	**401/5121**	**2,625 lei**
	Commissions and fees		*Suppliers / Cash at bank in lei*	

c.2) entry and collection of the selling price of inventory-like biological assets 52,500 lei (150 lambs x 350 lei / piece):

52,500 lei	**4111/ 5121**	**=**	**7018**	**52,500 lei**
	Customers / Cash at bank in lei		*Sales of inventory-like biological assets*	

c.3) writing off inventory-like biological assets – sold living lambs:

Value of sold biological assets: 49,875 lei (99,750 lei / 300 lambs x 150 lambs).

49,875 lei	**606**	**=**	**3611**	**49,875 lei**
	Inventory-like biological assets		*Inventory-like biological assets measured at fair value / living lambs*	

d) slaughtering and sale of 50 lambs in May N + 2 in the form of agricultural produce measured at fair value (IAS 41.13):

d.1) writing off inventory-like biological assets – slaughtered lambs:

Value of sold biological assets: 16,625 lei (99,750 lei / 300 lambs x 50 lambs).

16,625 lei	**606**	**=**	**3611**	**16,625 lei**
	Inventory-like biological assets		*Inventory-like biological assets measured at fair value / living lambs*	

d.2.) measurement of agricultural produce at harvest (lambs' slaughtering for carcass in own slaughterhouse):

Value at the time of harvest (lambs' slaughtering): 21,375 lei (22,500 lei (50 lambs x 18 kg / piece x 25 lei / kg – 1,125 lei (22,500 lei x 5%)).

21,375 lei	**347**	**=**	**711**	**21,375 lei**
	Agricultural produce / Lamb carcass		*Revenues associated with the costs of the completed production*	

d.3) entry and payment of commissions for brokering the sale of lamb carcass – agricultural produce:

1,125 lei	**622**	**=**	**401/5121**	**1,125 lei**
	Commissions and fees		*Suppliers / Cash at bank in lei*	

d.4.) entry and collection of the selling price of lamb carcass – agricultural produce:

22,500 lei	**4111/ 5121**	**=**	**7017**	**22,500 lei**
	Customers / Cash at bank in lei		*Sales of agricultural produce*	

d.5) writing off agricultural produce – sold lamb carcasses:

21,375 lei	**711**	**=**	**347**	**21,375 lei**
	Revenues associated with the costs of the completed production		*Agricultural produce / Lamb carcass*	

e) entering the collection and capitalization of wool from mature sheep:

e.1) measurement of agricultural produce at the time of harvest in May N + 2 – sheep shearing wool:

Value at the time of harvest (sheep shearing): 1,800 lei (2,000 kg x 1 leu / kg – 200 lei).

1,800 lei	**347**	**=**	**711**	**1,800 lei**
	Agricultural produce / Wool		*Revenues associated with the costs of the completed production*	

e.2) entry and payment of commissions for brokering the sale of wool – agricultural produce, June N + 2:

200 lei	**622**	**=**	**401/5121**	**200 lei**
	Commissions and fees		*Suppliers / Cash at bank in lei*	

e.3.) entry and collection of the selling price of wool – agricultural produce: 1,600 lei (2,000 kg x 0.80 lei / kg)

1,600 lei	**4111/ 5121**	**=**	**7017**	**1,600 lei**
	Customers / Cash at bank in lei		*Sales of agricultural produce*	

e.4) writing off agricultural produce – sold wool:

1,800 lei	**711**	**=**	**347**	**1,800 lei**
	Revenues associated with the costs of the completed production		*Agricultural produce / Wool*	

Remark. As can be seen, wool was sold for 0.80 lei / kg, lower value than the measurement of agricultural produce at the time of harvest.

f) entering the harvesting and capitalization of the milk milked daily from mature sheep:

f.1) measurement of agricultural produce at the time of harvest in May N + 2 – sheep's milk:

Value at the time of harvest (daily milking): 900 lei (375 liters x 3 lei / liter – 225 lei).

900 lei	**347**	**=**	**711**	**900 lei**
	Agricultural produce / Milk		*Revenues associated with the costs of the completed production*	

f.2.) entry and collection of the selling price of daily milked milk – agricultural produce:

1,125 lei	**4111 / 5121**	**=**	**7017**	**1,125 lei**
	Customers / Cash at bank in lei		*Sales of agricultural produce*	

f.3) writing off agricultural produce – sold milk:

900 lei	**711** *Revenues associated with the costs of the completed production*	=	**347** *Agricultural produce / Milk*	**900 lei**

g) entering the harvesting and capitalization of the milk milked daily from mature sheep:

g.1) measurement of agricultural produce at the time of harvest in June N + 2 – sheep's milk:

Value at the time of harvest (daily milking): 1.050 lei (300 liters x 4 lei /liter – 150 lei).

1,050 lei	**347** *Agricultural produce / Milk*	=	**711** *Revenues associated with the costs of the completed production*	**1,050 lei**

g.2) entry of the transfer of a quantity of 300 liters of milk in the category of raw materials to obtain the sheep telemea (300 liters x 3.50 lei/liter):

1,050 lei	**301** *Raw materials / Milk*	=	**347** *Agricultural produce / Milk*	**1,050 lei**

g.3) entry of consumption of raw materials – milk to obtain cheese:

1,050 lei	**601** *Raw materials*	=	**301** *Raw materials / Milk*	**1,050 lei**

g.4) we assume that the rest of the production costs to prepare sheep telemea are 1,200 lei worth

1,200 lei	**6XX** *Expenses by nature*	=	**%** **3XX** *Inventory accounts* **4XX** *Third party accounts* **5XX** *Treasury accounts*	**1,200 lei**

g.5) entry of an obtained quantity of 90 kg sheep telemea – finished produce, measured at the unit production cost of 25 lei / kg:

2,250 lei	**345** *Finished goods / Sheep telemea*	=	**711** *Revenues associated with the costs of the completed production*	**2,250 lei**

g.6) entry and collection of the receivable from the sale of a quantity of 50 kg of sheep telemea – finished produce at the selling price of 40 lei / kg:

2,000 lei	**4111/5121** *Customers / Cash at bank in lei*	=	**7015** *Sales of finished goods*	**2,000 lei**

g.7) writing off the quantity of 50 kg sheep telemea – sold finished produce, unit cost of 25 lei / kg:

1,250 lei	**711** *Revenues associated with the costs of the completed production*	=	**345** *Finished goods / Sheep telemea*	**1,250 lei**

h) measurement at the end of the reporting period (year) N + 2 of biological assets (IAS 41.12):

h.1) measurement at the end of the reporting period (year) N + 2 of bearer biological assets (IAS 41.12):

Measurement losses: 9,800 lei (127,400 lei (200 sheep x 650 lei – 2,600 lei (130,000 lei x 2%)) – 137,200 lei (the balance of the account 241 *Bearer biological assets / Flock of sheep* on January 1st, N + 2)).

9,800 lei	**6571** *Losses from the fair value measurement of bearer biological assets*	=	**2411** *Bearer biological assets measured at fair value / Flock of sheep*	**9,800 lei**

h.2) measurement at the end of the reporting period (year) N + 2 of inventory-like biological assets biologically transformed as a result of the capacity to change (IAS 41. 6 and 7):

Measurement gains: 30,450 lei (63,700 lei (100 heads x 650 lei – 1,300 lei (65,000 lei x 2%)) – 33,250 lei (the balance of the account 3611 *Inventory-like biological assets measured at fair value* May 31st, N+2)).

30,450 lei	**3611** *Inventory-like biological assets measured at fair value*	=	**7572** *Gains from the fair value measurement of inventory-like biological assets*	**30,450 lei**

h.3) the transfer of 80 heads from the category of inventory-like biological assets biologically transformed to the category of bearer biological assets at the value of 50,960 lei (63,700 lei / 100 heads x 80 heads):

50,960 lei	**2411** *Bearer biological assets measured at fair value / Flock of sheep*	=	**3611** *Inventory-like biological assets measured at fair value*	**50,960 lei**

Remark. The entity could have recognized from the initial measurement the 80 lambs it intended to biologically transform into bearer biological assets. Then the measurement at fair value of the entire flock of sheep at the end of the reporting period (year) N + 2.

- Initial recognition of immature bearer biological assets: 26,600 lei (80 heads x 350 lei – 1,400 lei (28,000 lei x 5%)).

26,600 lei	**241** *Bearer biological assets / Flock of sheep – immature*	=	**7571** *Gains from the fair value measurement of bearer biological assets*	**26,600 lei**

- Measurement at the end of the reporting period (year) N + 2 of inventory-like biological assets biologically transformed as a result of the ability of modification (IAS 41. 6 and 7):

Measurement gains: 6,090 lei (12,740 lei (20 heads x 650 lei – 260 lei (13,000 lei x 2%)) – 6,650 lei (the balance of the account 3611 *Inventory-like biological assets measured at fair value* on 31st of May N + 2).

6,090 lei	**3611** *Inventory-like biological assets measured at fair value*	=	**7572** *Gains from the fair value measurement of inventory-like biological assets*	**6,090 lei**

- Measurement at the end of the reporting period (year) N + 2 of immature bearer biological assets biologically transformed as a result of the ability of modification into mature bearer biological assets (IAS 41 – 6 and 7):

Measurement gains: 24,360 lei (50,960 lei (80 heads x 650 lei – 1,040 lei (52,000 lei x 2%)) – 26,600 lei (value at initial recognition).

24,360 lei	**2411** *Bearer biological assets measured at fair value / Flock of sheep – mature*	=	**7571** *Gains from the fair value measurement of bearer biological assets*	**24,360 lei**

i) entry of mature sheep slaughtering as a result of their degeneration and capitalization by sale of the resulted carcasses and raw skins (IAS 41. 13 and 7):

i.1) measurement of agricultural produce at the time of harvest in October N + 7:

The fair value of agricultural produce at the time of mature sheep slaughtering:

- Sheep carcass: 184,300 lei (4,850 kg x 40 lei / kg – 9,700 lei (194,000 lei x 5%)));

184,300 lei	**347** *Agricultural produce / Sheep carcass*	=	**711** *Revenues associated with the costs of the completed production*	**184,300 lei**

- Raw skins: 11,400 lei (120 pieces x 100 lei / piece – 600 lei (12,000 lei x 5%)));

11,400 lei	**347** *Agricultural produce / Raw sheep skins*	=	**711** *Revenues associated with the costs of the completed production*	**11,400 lei**

i.2) writing off by slaughtering of the degenerate bearer biological asset:

Value of the derecognized biological asset: 76,440 lei (178,360 lei / 280 sheep x 120 sheep).

76,440 lei	**6571** *Losses from the fair value measurement of bearer biological assets*	=	**2411** *Bearer biological assets measured at fair value / Flock of sheep*	**76,440 lei**

i.3.) entry and collection of the selling price of agricultural produce: 206,000 lei:

206,000 lei	**4111/ 5121** *Customers / Cash at bank in lei*	=	**7017** *Sales of agricultural produce*	**206,000 lei**

i.4) writing off sold agricultural produce – sheep carcass and raw sheep skins:

195,700 lei	**711** *Revenues associated with the costs of the completed production*	=	**347** *Agricultural produce / Sheep carcass / Raw sheep skins*	**195,700 lei**

Example 3. *Recognition and measurement at fair value or cost of a (immature and mature) inventory-like biological asset and the harvested agricultural produce, respectively receipt of a government subsidy*

An entity that carries out agricultural activities in September year N owns an area of 300 hectares of arable land and a zootechnical farm for breeding birds for meat and eggs.

In September year N, establishes a rape crop for oil on 100 hectares, and in October N, establishes a wheat crop on 200 hectares. The costs of setting up a hectare of rape are 2,500 lei and for a hectare of wheat are 2,000 lei. At the date of setting up the crops, no market prices are available for the rape crop and the measurement at initial recognition is made at cost and at fair

value for the wheat crop. Thus, the selling price of one hectare of grown wheat on the date of measurement (less the land) is 2,800 lei, and the selling costs are 200 lei / hectare.

The Ministry of Agriculture, through the Agency for Payments and Intervention for Agriculture grants in year N a government subsidy of 160 euros at an exchange rate of 4.75 lei / euro for each hectare of land, provided that the land is cultivated.

The entity, via the zootechnical farm, in September N obtains from its own production 2,000 chickens. The initial recognition is made at the fair value of 5 lei for a one-day-old chicken, and the unit selling cost is 1 lei. In November N, the entity sells to a customer 1,500 living chickens for meat, with a unit price of 20 lei.

At the end of the reporting period (year) N, following the pedological drought, the crops are affected. Thus, one hectare of wheat is measured at a fair value of 2,100 lei, costs to sell are 200 lei / hectare, and one hectare of rape at the value of 1,800 lei.

At the end of the reporting period (year) N, the entity measures at fair value the inventory-like biological assets, 500 chickens biologically transformed as a result of the ability of modification into laying hens, the unit selling price 35 lei, and the costs to sell are in 10% of the unit selling price.

In February N + 1, the 500 laying hens raised on the ground produce 450 eggs daily. These are measured at a fair value of 1.60 lei / egg, and the costs to sell are 5% of the unit selling price.

In June N + 1, as a result of the biological transformation, the rape crop reaches maturity and is harvested, the average quantity obtained per hectare is 3,000 kg, the measurement of the agricultural produce is made at the fair value of 2 lei / kg, and the costs to sell are 5% of the unit selling price.

In July N + 1, as a result of the biological transformation, the wheat crop reaches maturity and is harvested, the average quantity obtained per hectare is 6,500 kg, the measurement of the agricultural produce is made at the fair value of 0.80 lei / kg, and the costs to sell are 5% of the unit selling price.

We do not account for VAT or other due taxes.

The proposed accounting entries are:

a) entry of the measurement and recognition of agricultural crops at start as immature inventory-like biological assets:

- The generic entries of expenses according to the nature of the information obtained within the management accounting, through specific procedures and techniques are:
  - the total cost for the rape crop: 250,000 lei (100 hectares x 2,500 lei).
  - the total cost for the wheat crop: 400,000 lei (200 hectares x 2,000 lei).

650,000 lei	**6XX** *Expenses by nature*	=	**%** **3XX** *Inventory accounts* **4XX** *Third parties accounts* **5XX** *Treasury accounts*	**650,000 lei**

a.1) the initial recognition of the rape crop in September N (IAS 41. 12 and 30):

Value at initial recognition: 250,000 lei.

250,000 lei	**3612** *Inventory-like biological assets measured at cost / Rape crop*	=	**711** *Revenues associated with the costs of the completed production*	**250,000 lei**

a.2) the initial recognition of the wheat crop in October N (IAS 41.12):

Value at initial recognition: 520,000 lei. (200 hectares x (2,800 lei – 200 lei)).

520,000 lei	**3611** *Inventory-like biological assets measured at fair value / Wheat crop*	=	**7572** *Gains from the fair value measurement of inventory-like biological assets*	**520,000 lei**

b) entry of government subsidies:

b.1) entry of the receivable from the government subsidy before setting up of the crop (IAS 41. 34 and 35): 228,000 lei (300 hectares x 160 euro / hectare x 4.75 lei / euro).

228,000 lei	**4451** *Governmental subsidies*	=	**472** *Deferred income*	**228,000 lei**

Remark. We calculate the subsidy for all inventory-like biological assets regardless of how they are measured at recognition, at cost or fair value.

b.2) when fulfilling the condition for cultivating the agricultural land and checking the land through satellite:

- collection of the receivable from government subsidies that has become due:

228,000 lei	**5121** *Cash at bank in lei*	**=**	**4451** *Governmental subsidies*	**228,000 lei**

- recognition in profit or loss (on incomes) of the subsidy that has become due:

228,000 lei	**472** *Deferred income*	**=**	**741** *Subsidies for operating activities*	**228,000 lei**

Remark. If the subsidy is entered after fulfilling the condition regarding the cultivation of the agricultural land, the registration is:

228,000 lei	**4451** *Governmental subsidies*	**=**	**741** *Subsidies for operating activities*	**228,000 lei**

c) entry of inventory-like biological assets from the zootechnical farm:

c.1) entry of the measurement and recognition of the chicken's hatching as immature inventory-like biological assets in September N (IAS 41.12):

Value at initial recognition: 8,000 lei (2,000 heads x (5 lei – 1 leu)).

8,000 lei	**3611** *Inventory-like biological assets measured at fair value / Chickens*	**=**	**7572** *Gains from the fair value measurement of inventory-like biological assets*	**8,000 lei**

c.2) entry and collection of the sale price of the mature inventory-like biological assets (good for slaughter) in November N 30,000 lei (1,500 chickens x 20 lei / piece):

30,000 lei	**4111/ 5121** *Customers/ Cash at bank in lei*	**=**	**7018** *Sales of inventory-like biological assets*	**30,000 lei**

c.3) writing off inventory-like biological assets – sold living chickens:

Value of sold biological assets: 6,000 lei (8,000 lei / 2,000 chickens x 1,500 chickens).

6,000 lei	**606** *Inventory-like biological assets*	**=**	**3611** *Inventory-like biological assets measured at fair value / Chickens*	**6,000 lei**

d) measurement at the end of the reporting period (year) N of inventory-like biological assets:

d.1) inventory-like biological assets measured at fair value – wheat crop:

Measurement losses: 140,000 lei (380,000 lei (200 hectares x (2,100 lei – 200 lei) – 520,000 lei)).

140,000 lei	**6572** *Losses from the fair value measurement of inventory-like biological assets*	**=**	**3611** *Inventory-like biological assets measured at fair value / Wheat crop*	**140,000 lei**

d.2) inventory-like biological assets measured at cost – rape crop (IAS 41. 12 and 30):

Impairment losses: 70,000 lei (180,000 lei (100 hectares x 1,800 lei – 250,000 lei)).

70,000 lei	**6814** *Impairment of current assets*	**=**	**396** *Write-down of inventory-like biological assets*	**70,000 lei**

d.3) inventory-like biological assets measured at fair value at the end of the reporting period and as a result of the biological transformation – chickens became laying hens (IAS 41. 12, 6 and 7):

Measurement gains: 13,750 lei (15,750 lei (500 heads x 35 lei – 1,750 lei (17,500 lei x 10%)) – 2,000 lei (the balance of the account 3611 *Inventory-like biological assets measured at fair value* on November 30th, N)).

15,750 lei	**3611** *Inventory-like biological assets measured at fair value / Laying hens*	**=**	**%** **7572** *Gains from the fair value measurement of inventory-like biological assets*	**15,750 lei** **13,750 lei**
			3611* *Inventory-like biological assets measured at fair value / Chickens*	**2,000 lei**

* For closing the analytical account **3611**/ *Chickens.*

e) entry of the harvest in February year N + 1 of agricultural produce – hen eggs (IAS 41.13):

Value at the time of egg harvesting (for one day): 684 lei (450 eggs x 1.60 lei / piece – 36 lei (720 lei x 5%)).

684 lei	**347** *Agricultural produce / Eggs*	**=**	**711** *Revenues associated with the costs of the completed production*	**684 lei**

f) entry of the harvest in June year N + 1 of agricultural produce – rapeseed (IAS 41.13):

f.1) entry of agricultural produce – rapeseed:

Value at the time of rapeseed harvesting: 570,000 lei (100 hectares x 3,000 kg / hectare x 2 lei/kg – 30,000 lei (600,000 lei x 5%)).

570,000 lei	**347** *Agricultural produce / Rapeseed*	**=**	**711** *Revenues associated with the costs of the completed production*	**570,000 lei**

f.2) entry of the rapeseed crop's degeneration by harvesting the rapeseed (IAS 41. 13 and 7):

250,000 lei	**606** *Inventory-like biological assets*	**=**	**3612** *Inventory-like biological assets measured at cost / Rape crop*	**250,000 lei**

f.3) closing the impairments of the rapeseed crop left without object:

70,000 lei	**396** *Write-down of inventory-like biological assets*	**=**	**7814** *Reversal of write-down of current assets*	**70,000 lei**

g) entry of the harvest in July year N + 1 of agricultural produce – wheat grain (IAS 41.13):

g.1) entry of agricultural produce – wheat grain:

Value at the time of wheat grain harvesting: 988,000 lei (200 hectares x 6,500 kg / hectares x 0.80 lei / kg – 52,000 lei (1,040,000 lei x 5%)).

988,000 lei	**347** *Agricultural produce / Wheat grain*	**=**	**711** *Revenues associated with the costs of the completed production*	**988,000 lei**

g.2) entry of the wheat crop's degeneration by harvesting the wheat grains (IAS 41.13 and 7):

380,000 lei	**606** *Inventory-like biological assets*	**=**	**3611** *Inventory-like biological assets measured at fair value / Wheat crop*	**380,000 lei**

Remark. After harvesting agricultural produce, the record of their use falls under IAS 2 *Inventories*.

Example 4. *Recognition and measurement at fair value or cost of (immature and mature) bearer biological assets, bearer plants and the harvested agricultural produce, respectively the receipt of a government investment subsidy*

An entity carrying out agricultural activities acquired in January N, in a hilly area, an oak forest with an area of 50 hectares, with a plantation age of 26 years, from which wood mass will be harvested according to the forest exploitation norms, in 4 years; a new edible chestnut plantation with an area of 10 hectares, from which fruits (edible chestnuts) will be harvested in 3 years; a vineyard with an area of 15 hectares that will bear fruit in 3 years; a vacant lot in the same area with an area of 10 hectares for the establishment of new plantations. The unit purchase prices including the land to which the biological assets are physically connected were the following: 1 hectare of oak forest 45,000 lei, 1 hectare of edible chestnut plantation 25,000 lei, 1 hectare of vines 20,000 lei, 1 hectare of vacant land 15,000 lei. The purchase cost / sale price can be considered a good estimate of the fair value of these biological assets on a main active market. If the entity decides to sell the purchased biological assets in the immediately following period, it must pay costs to sell (commissions for brokering the sale) at 10% of the unit selling price.

In March, year N, the entity sets up by itself an edible chestnut plantation on the purchased vacant land on an area of 5 hectares at a unit cost of 8,000 lei / hectare and a vine crop on the rest of the surface of 5 hectares at a unit cost of 3,500 lei / hectare. On the occasion of establishing these plantations, the entity receives from the *Ministry of Agriculture* via the *Agency for Payments and Intervention for Agriculture*, in June year N a government subsidy for investments amounting to 500 euros at an exchange rate of 4.80 lei / euro for each hectare of land newly planted, provided that the established plantations are not alienated until the year of bearing fruits (year N + 3).

During year N, the entity's expenses according to their nature (information obtained in management accounting, through specific procedures and techniques) with the maintenance of the biological assets (phytosanitary treatments, fruit cuttings, irrigation, fertilizers, etc.) are 600 lei / hectare.

At the end of the reporting period (year) N, the entity measures: bearer biological assets at fair value less costs to sell as such 1 hectare of oak forest 48,000 lei and 1 hectare of edible chestnut plantation 25,000 lei, and the costs to sell are 10% of the unit selling price; bearer plants –

vines in the cost-based model, having a recoverable value of 4,500 lei / hectare equal to the fair value minus the costs to sell and higher than the use value; all agricultural lands are revalued with a fair value of 17,000 lei.

At the end of the reporting period (year) N + 1, the entity measures: bearer biological assets at fair value as such 1 hectare of oak forest 48,000 lei and 1 hectare of edible chestnut plantation 29,000 lei, and the costs to sell are 10% of unit selling price; bearer plants – vines at the cost-based model, with a recoverable value of 4,500 lei / hectare; all agricultural lands are revalued with a fair value of 16,000 lei.

At the end of the reporting period (year) N + 2, the entity measures: bearer biological assets at fair value as such 1 hectare of oak forest 44,000 lei and 1 hectare of edible chestnut plantation 30,000 lei, and the costs to sell are 10% of unit selling price; bearer plants – vines at the cost-based model, with a recoverable value of 4,500 lei / hectare; all agricultural lands are revalued with a fair value of 14,000 lei.

In September year N + 3, the entity takes delivery of the self-made investment representing the winegrowing crop as a result of the transition into fruit. Additional expenses were made with the investment amounting to 1,500 lei / hectare. The calculation of the depreciation of tangible assets starts in October year N + 3, the useful life is 20 years, the method of linear depreciation is used and the residual value is 200 lei / hectare. At the same time, the recognition of the government subsidy for investments in profit or loss begins as a result of the return of investment's start.

In October N + 3, the entity harvests grapes for wine 6,000 kg / hectare, the unit selling price is of 5 lei / kg, and edible chestnuts 9,000 kg / hectare, the unit selling price is of 10 lei / kg, and the costs to sell are 10% of the unit selling price. At the same time, takes place the recognition of the government subsidy for investments in profit or loss as a result of fulfilling the granting condition.

At the end of the reporting period (year) N + 3, the entity measures: bearer biological assets at fair value as such 1 hectare oak forest 50,000 lei and 1 hectare of edible chestnut plantation 35,000 lei, and the costs to sell are 10% of the unit selling price; bearer plants – vines at the cost-based model, with a recoverable value of 4,000 lei / hectare; all agricultural lands are revalued with a fair value of 17,000 lei.

In January of the year N + 4, the entity starts harvesting wood mass from the oak forest that has reached maturity. Thus, on 45 hectares, 5 cubic meters per hectare are obtained, and on 5 hectare, the entire wood mass is cut (under the counter logging), from which 30 cubic meters per hectare are obtained (trees / logs in bark). The unit selling price is 1,500 lei per cubic meter, and the costs to sell are 10% of the unit selling price. From the quantity of harvested wood mass, the entity processes 100 cubic meters from which it obtains 80 cubic meters of wood for constructions (timber), unit cost 2,800 lei per cubic meter.

In March year N + 4, the entity occasionally harvests from the edible chestnut plantation (by fruit cuttings and broken or dried trees) firewood in the amount of 5 cubic meters, the unit selling price 300 lei per cubic meter, and the costs to sell are 10% of the unit selling price. Subsequently, the firewood is sold with a unit selling price of 500 lei / cubic meter.

At the end of the reporting period (year) N + 4, the entity measures: bearer biological assets at fair value as such 1 hectare of oak forest 49,000 lei and 1 hectare of edible chestnut plantation 36,000 lei, and the costs to sell are 10% of unit selling price; bearer plants – vines at the cost-based model, with a recoverable value of 4,500 lei / hectare; all agricultural lands are revalued with a fair value of 17,000 lei.

In October year N + 5, the entity sells 10 hectares of oak forest, the unit selling price is 60,000 lei / hectare and 3 hectares of vines, the unit selling price is 24,000 lei. The unit selling prices of the biological assets also include the selling price of the land to which the biological assets are physically connected in a unit value of 18,000 lei / hectare.

We do not account for VAT or other due taxes.

The proposed accounting entries are:

a) recognition and initial measurement in January year N:

Remark. We consider that the oak forest was established for forest exploitation (it is not a pure exploitation) so that the harvesting of wood mass is done without the abolition of the plantation (cutting down all the trees on a certain area) and for a long time, and consequently, we recognized the oak forest in the category of bearer biological assets. IAS 41 *Agriculture*, paragraph 44, includes trees grown for timber in the category of consumable (inventory-like) biological assets. Under these conditions, the recognition is made using the account **361** *Inventory-like biological assets*.

a.1) entry of the acquisition from the supplier of the bearer biological asset – Oak forest (IAS 41.12 and 26):

Value at initial recognition of the bearer biological asset: 1,350,000 lei (50 hectares x (45,000 lei – 15,000 lei (land) – 3,000 lei) (30,000 lei x 10%)).

Value at initial recognition of the agricultural land: 750,000 lei (50 hectares x 15,000 lei).

2,250,000 lei	%	=	**404**	**2,250,000 lei**
1,350,000 lei	**2411**		*Suppliers of non-current assets*	
	Bearer biological assets measured at fair value / Oak forest			
750,000 lei	**2111**			
	Freehold land / Oak			
150,000 lei	**6571**			
	Losses from the fair value measurement of bearer biological assets			

a.2) entry of the acquisition from the supplier of the bearer biological asset – Chestnut plantation (IAS 41.12 and 26):

Value at initial recognition of the bearer biological asset: 90,000 lei (10 hectares x (25,000 lei – 15,000 lei (land) – 1,000 lei) (10,000 lei x 10%)).

Value at initial recognition of the agricultural land: 150,000 lei (10 hectares x 15,000 lei).

250,000 lei	%	=	**404**	**250,000 lei**
90,000 lei	**2411**		*Suppliers of non-current assets*	
	Bearer biological assets measured at fair value / Chestnut plantation			
150,000 lei	**2111**			
	Freehold land / Edible chestnut			
10,000 lei	**6571**			
	Losses from the fair value measurement of bearer biological assets			

a.3) entry of the purchase from the supplier of bearer plants – Winegrowing plantation (IAS 16. 15 and 16):

Value at initial recognition of the biological asset: 75,000 lei (15 hectares x (20,000 lei – 15,000 lei (land)).

Value at initial recognition of the agricultural land: 225,000 lei (15 hectares x 15,000 lei).

300,000 lei	%	=	**404**	**300,000 lei**
75,000 lei	**218**		*Suppliers of non-current assets*	
	Bearer plants / Winegrowing plantation			
225,000 lei	**2111**			
	Freehold land / Winegrowing			

a.4) entry of the acquisition from the supplier of the vacant agricultural land (IAS 16. 15 and 16):

Value at the initial recognition of the vacant agricultural land: 150,000 lei (10 hectares x 15,000 lei).

150,000 lei	**2111**	=	**404**	**150,000 lei**
	Freehold land / Vacant		*Suppliers of non-current assets*	

b) entry of the measurement and recognition at the establishment of biological assets in March N:

- The generic entries of expenses according to the nature of the information obtained within the management accounting, through specific procedures and techniques:
  - the total cost for the edible chestnut plantation: 40,000 lei (5 hectares x 8,000 lei).
  - the total cost for the winegrowing plantation: 17,500 lei (5 hectares x 3,500 lei).

57,500 lei	**6XX**	=	**%**	**57,500 lei**
	Expenses by nature		**3XX**	
			Inventory accounts	
			4XX	
			Third parties accounts	
			5XX	
			Treasury accounts	

b.1) initial recognition of the bearer biological asset – Chestnut plantation (IAS 41. 12):

Value at initial recognition of the bearer biological asset: 45,000 lei (5 hectares x (10,000 lei – 1,000 lei) (10,000 lei x 10%)).

45,000 lei	**2411** *Bearer biological assets measured at fair value / Chestnut plantation*	**=**	**7571** *Gains from the fair value measurement of bearer biological assets*	**45,000 lei**

b.2) initial recognition of the biological asset – Winegrowing plantation for productive plants, tangible assets in progress (IAS 16. 22A):

Value at initial recognition of the ongoing investment: 17,500 lei (5 hectares x 3,500 lei).

17,500 lei	**231** *Tangible assets in progress / Winegrowing plantation*	**=**	**722** *Capitalized costs of tangible non-current assets*	**17,500 lei**

b.3) entry of government subsidies for investment:

b.3.1.) entry of the receivable from the government subsidy for investments at the moment of plantations' establishment (IAS 41. 35): 24,000 lei (10 hectares x 500 euro / hectare x 4.80 lei / euro).

24,000 lei	**4451** *Governmental subsidies*	**=**	**4751** *Governmental investment subsidies*	**24,000 lei**

b.3.2) collection of the receivable from government subsidies for investments granted at the establishment of plantations:

24,000 lei	**5121** *Cash at bank in lei*	**=**	**4451** *Governmental subsidies*	**24,000 lei**

c) recording the entity's expenses by their nature (information obtained in management accounting, through specific procedures and techniques) with the maintenance of biological assets: 51,000 lei (85 hectares x 600 lei).

51,000 lei	**6XX** *Expenses by nature*	**=**	**%** **3XX** *Inventory accounts* **4XX** *Third parties accounts* **5XX** *Treasury accounts*	**51,000 lei**

d) measurement at the end of the reporting period (year) N of biological assets and agricultural lands:

d.1) bearer biological assets valued at fair value – Oak forest (IAS 41.12):

Value at the end of the period of the bearer biological asset: 1,395,000 lei (50 hectares x (48,000 lei – 17,000 lei (land) – 3,100 lei) (31,000 lei x 10%)).

Measurement gains: 45,000 lei (1,395,000 lei – 1,350,000 lei (value at recognition)).

45,000 lei	**2411** *Bearer biological assets measured at fair value / Oak forest*	=	**7571** *Gains from the fair value measurement of bearer biological assets*	**45,000 lei**

d.2) bearer biological assets valued at fair value – Chestnut plantation (IAS 41.12):

Value at the end of the period of the bearer biological asset: 108,000 lei (15 hectares x (25,000 lei – 17,000 lei (land) – 800 lei) (8,000 lei x 10%)).

Measurement losses: 27,000 lei (108,000 lei – 135,000 lei (90,000 lei + 45,000 lei)).

27,000 lei	**6571** *Losses from the fair value measurement of bearer biological assets*	**=**	**2411** *Bearer biological assets measured at fair value / Chestnut plantation*	**27,000 lei**

d.3) bearer plants measured at cost – Winegrowing plantation (IAS 16.30):

Value at the end of the period of the bearer plants: 67,500 lei (15 hectares x 4,500 lei).

Impairment losses: 7,500 lei (15 hectares x (4,500 lei – 5,000 lei (acquisition cost)).

7,500 lei	**6813** *Impairment losses on non-current assets, of real estate investments and bearer biological assets measured at cost*	**=**	**2918** *Impairment of bearer plants*	**7,500 lei**

d.4) agricultural land measured at revalued value – Freehold land (IAS 16.31):

Surpluses from land measurement per hectare: 2,000 lei (17,000 lei – 15,000 lei (value at recognition)).

- The land associated with the Oak forest: 50 hectares x 2,000 lei / hectare.

100,000 lei	**2111** *Freehold land / Oak*	=	**1052** *Reserves from revaluation of tangible assets / Freehold land Oak*	**100,000 lei**

- The land associated with the Chestnut plantation: 15 hectares x 2,000 lei / hectare.

30,000 lei	**2111** *Freehold land / Edible chestnut*	=	**1052** *Reserves from revaluation of tangible assets / Freehold land Edible chestnut*	**30,000 lei**

- The land associated with the Winegrowing plantation: 20 hectares x 2,000 lei / hectare.

40,000 lei	**2111** *Freehold land / Winegrowing*	=	**1052** *Reserves from revaluation of tangible assets / Vineyard land*	**40,000 lei**

Remark. The account 2111 *Freehold land / Vacant* – 10 hectares closed by transfer after planting.

e) measurement at the end of the reporting period (year) N + 1 of biological assets and agricultural land:

e.1) bearer biological assets measured at fair value – Oak forest (IAS 41.12):

Value at the end of the period of the bearer biological asset: 1,440,000 lei (50 hectares x (48,000 lei – 16,000 lei (land) – 3,200 lei) (32,000 lei x 10%)).

Measurement gains: 45,000 lei (1,440,000 lei – 1,395,000 lei (value at the end of year N)).

45,000 lei	**2411** *Bearer biological assets measured at fair value / Oak forest*	=	**7571** *Gains from the fair value measurement of bearer biological assets*	**45,000 lei**

e.2) bearer biological assets measured at fair value – Chestnut plantation (IAS 41.12):

Value at the end of the period of the bearer biological asset: 175,500 lei (15 hectares x (29,000 lei – 16,000 lei (land) – 1,300 lei) (13,000 lei x 10%)).

Measurement gains: 67,500 lei (175,500 lei – 108,000 lei (value at the end of year N)).

67,500 lei	**2411** *Bearer biological assets measured at fair value / Chestnut plantation*	=	**7571** *Gains from the fair value measurement of bearer biological assets*	**67,500 lei**

e.3) bearer plants measured at cost – Winegrowing plantation (IAS 16.30):

Value at the end of the period of the bearer plants: 67,500 lei (15 hectares x 4,500 lei).

As there have been no changes in the carrying amount, bearer plants will be reported at the carrying amount at the end of the reporting period (year) N.

e.4) agricultural land measured at revalued value – Freehold land (IAS 16.31):

Minuses from land measurement per hectare: – 1,000 lei (16,000 lei – 17,000 lei (value at the end of year N)).

- The land associated with the Oak forest: 50 hectares x 1,000 lei / hectare.

50,000 lei	**1052** *Reserves from revaluation of tangible assets / Freehold land Oak*	=	**2111** *Freehold land / Oak*	**50,000 lei**

- The land associated with the Chestnut plantation: 15 hectares x 1,000 lei / hectare.

15,000 lei	**1052** *Reserves from revaluation of tangible assets / Freehold land Edible oak*	=	**2111** *Freehold land / Edible oak*	**15,000 lei**

- The land associated with the Winegrowing plantation: 20 hectares x 1,000 lei / hectare.

20,000 lei	**1052** *Reserves from revaluation of tangible assets / Vineyard land*	=	**2111** *Freehold land / Winegrowing*	**20,000 lei**

f) measurement at the end of the reporting period (year) N + 2 of biological assets and agricultural lands:

f.1) bearer biological assets measured at fair value – Oak (IAS 41.12):

Value at the end of the period of the bearer biological asset: 1,350,000 lei (50 hectares x (44,000 lei – 14,000 lei (land) – 3,000 lei) (30,000 lei x 10%)).

Measurement losses: 90,000 lei (1,350,000 lei – 1,440,000 lei (value at the end of year N+1)).

90,000 lei	**6571** *Losses from the fair value measurement of bearer biological assets*	=	**2411** *Bearer biological assets measured at fair value / Oak forest*	**90,000 lei**

f.2) bearer biological assets measured at fair value – Chestnut plantation (IAS 41.12):

Value at the end of the period of the bearer biological asset: 216,000 lei (15 hectares x (30,000 lei – 14,000 lei (land) – 1,600 lei) (16,000 lei x 10%)).

Measurement gains: 40,500 lei (216,000 lei – 175,500 lei (value at the end of year N+1)).

40,500 lei	**2411** *Bearer biological assets measured at fair value / Chestnut plantation*	=	**7571** *Gains from the fair value measurement of bearer biological assets*	**40,500 lei**

f.3) bearer plants measured at cost – Winegrowing plantation (IAS 16.30):

Value at the end of the period of the bearer plants: 67,500 lei (15 hectares x 4,500 lei).

As there have been no changes in the carrying amount, bearer plants will be reported at the carrying amount at the end of the reporting period (year) N + 1.

f.4) agricultural land measured at revalued value – Freehold land (IAS 16.31):

Minuses from land measurement per hectare: – 2,000 lei (14,000 lei – 16,000 lei (value at the end of year N+1)).

- The land associated with the Oak forest: 50 hectares x 2,000 lei / hectare.

100,000 lei	**%**	=	**2111**	**100,000 lei**
50,000 lei	**1052**		*Freehold land / Oak*	
	Reserves from revaluation of tangible assets / Freehold land Oak			
50,000 lei	**6552**			
	Revaluation of tangible assets			

- The land associated with the Chestnut plantation: 15 hectares x 2,000 lei / hectare.

30,000 lei	**%**	=	**2111**	**30,000 lei**
15,000 lei	**1052**		*Freehold land / Edible chestnut*	
	Reserves from revaluation of tangible assets / Freehold land Edible chestnut			
15,000 lei	**6552**			
	Revaluation of tangible assets			

- The land associated with the Winegrowing plantation: 20 hectares x 2,000 lei / hectare.

40,000 lei	**%**	=	**2111**	**40,000 lei**
20,000 lei	**1052**		*Freehold land / Winegrowing*	
	Reserves from revaluation of tangible assets / Vineyard land			
20,000 lei	**6552**			
	Revaluation of tangible assets			

g) entry of acceptance and recognition of the investment made by oneself – Winegrowing plantation in September N + 3, start of depreciation calculation and start of recognition of government subsidy in profit or loss in October N + 3:

- The generic entries of expenses according to the nature of the information obtained within the management accounting, through specific procedures and techniques:
  - the total additional cost: 7,500 lei (5 hectares x 1,500 lei).

7,500 lei	**6XX**	**=**	**%**	**7,500 lei**
	Expenses by nature		**3XX**	
			Inventory accounts	
			4XX	
			Third parties accounts	
			5XX	
			Treasury accounts	

g.1) investment recognition – Winegrowing plantation to bearer plants in September N + 3 (IAS 16.22A):

Value at initial recognition of the ongoing investment: 17,500 lei (5 hectares x 3,500 lei).

Value at acceptance and recognition of the completed investment when the plant starts to bear fruits: 25,000 lei (5 hectares x 5,000 lei).

25,000 lei	**218**	**=**	**%**	**25,000 lei**
	Bearer plants / Winegrowing plantation		**231**	**17,500 lei**
			Tangible assets in progress / Winegrowing plantation	
			722	**7,500 lei**
			Capitalized costs of tangible non-current assets	

g.2) entering depreciation for October N + 3 of the Winegrowing plantation as a result of the transfer to bearer plant (IAS 16.55):

Monthly depreciation: 400 lei (20 hectares x (5,000 lei (cost) – 200 lei (residual value)) / 20 years / 12 months)).

400 lei	**6811**	**=**	**2818**	**400 lei**
	Depreciation of non-current assets, of real estate investments and bearer biological assets measured at cost		*Depreciation of bearer plants*	

g.3) entry of the government subsidy for investments in profit or loss (IAS 20.12):

Recognized monthly subsidy: 50 lei (12,000 lei (5 hectares x 500 euro / hectare x 4.80 lei / euro) / 20 years / 12 months).

50 lei	**4751**	**=**	**7584**	**50 lei**
	Governmental investment subsidies		*Amortization of investment subsidies*	

h) entry of the agricultural produce harvest in October year N + 3 and recognition of the government subsidy in profit or loss in October N + 3:

h.1) measurement of harvested wine grape production (IAS 41.13):

Value at the time of harvest: 540,000 lei (20 hectares x 6,000 kg / hectare x 5 lei / kg – 60,000 lei (600,000 lei x 10%)).

540,000 lei	**347**	**=**	**711**	**540,000 lei**
	Agricultural produce / Wine grapes		*Revenues associated with the costs of the completed production*	

h.2) measurement of harvested edible chestnuts production (IAS 41.13):

Value at the time of harvest: 1,215,000 lei (15 hectares x 9,000 kg / hectare x 10 lei / kg – 135,000 lei (1,350,000 lei x 10%)).

1,215,000 lei	**347**	**=**	**711**	**1,215,000 lei**
	Agricultural produce / Edible chestnuts		*Revenues associated with the costs of the completed production*	

h.3) entry of the government subsidy for investments in profit or loss (IAS 41.35):

Recognized government subsidy: 12,000 lei (5 hectares x 500 euro / hectare x 4.80 lei / euro)

12,000 lei	**4751**	**=**	**7584**	**12,000 lei**
	Governmental investment subsidies		*Amortization of investment subsidies*	

i) measurement at the end of the reporting period (year) N + 3 of biological assets and agricultural land:

i.1) bearer biological assets measured at fair value – Oak forest (IAS 41.12):

Value at the end of the period of the bearer biological asset: 1,485,000 lei (50 hectares x (50,000 lei – 17,000 lei (land) – 3,300 lei) (33,000 lei x 10%)).

Measurement gains: 135,000 lei (1,485,000 lei – 1,350,000 lei (value at the end of the year N+2)).

135,000 lei	**2411**	**=**	**7571**	**135,000 lei**
	Bearer biological assets measured at fair value / Oak forest		*Gains from the fair value measurement of bearer biological assets*	

i.2) bearer biological assets valued at fair value – Chestnut plantation (IAS 41.12):

Value at the end of the period of the bearer biological asset: 243,000 lei (15 hectares x (35,000 lei – 17,000 lei (land) – 1,800 lei) (18,000 lei x 10%)).

Measurement gains: 27,000 lei (243,000 lei – 216,000 lei (value at the end of the year N+2)).

27,000 lei	**2411**	**=**	**7571**	**27,000 lei**
	Bearer biological assets measured at fair value / Chestnut plantation		*Gains from the fair value measurement of bearer biological assets*	

i.3) bearer plants measured at cost – Winegrowing plantation (IAS 16.30):

Value at the end of the period of the bearer plants: 80,000 lei (20 hectares x 4,000 lei).

Impairment losses: 20,000 lei (20 hectares x (4,000 lei – 5,000 lei (acquisition cost)).

Impairment of bearer plants recognized at the end of the reporting period (year) N: 7,500 lei.

12,500 lei	**6813**	**=**	**2918**	**12,500 lei**
	Impairment losses on non-current assets, of real estate investments and bearer biological assets measured at cost		*Impairment of bearer plants*	

i.4) agricultural land measured at revalued value – Freehold land (IAS 16.31):

Surpluses from land measurement per hectare: 3,000 lei (17,000 lei – 14,000 lei (value at the end of the year N+2)).

- The land associated with the Oak forest: 50 hectares x 3,000 lei / hectare.

150,000 lei	**2111**	**=**	**%**	**150,000 lei**
	Freehold land / Oak		**1052**	**100,000 lei**
			Reserves from revaluation of tangible assets / Freehold land Oak	
			7552	**50,000 lei**
			Revaluation of tangible assets	

- The land associated with the Chestnut plantation: 15 hectares x 3,000 lei / hectare.

45,000 lei	**2111**	=	**%**	**45,000 lei**
	Freehold land / Edible chestnut		**1052**	**30,000 lei**
			Reserves from revaluation of tangible assets / Freehold land Edible chestnut	
			7552	**15,000 lei**
			Revaluation of tangible assets	

- The land associated with the Winegrowing plantation: 20 hectares x 3,000 lei / hectare.

40,000 lei	**2111**	=	**%**	**60,000 lei**
	Freehold land / Winegrowing		**1052**	**40,000 lei**
			Reserves from revaluation of tangible assets / Vineyard land	
			7552	**20,000 lei**
			Revaluation of tangible assets	

j) entry of harvesting and processing in January year N + 4 of agricultural produce – wood mass (IAS 41.13):

j.1) entry of agricultural produce harvesting – wood mass:

Value at the time of harvesting the wood mass on 45 hectares: 303,750 lei (45 hectares x 5 cubic meters / hectare x 1,500 lei / cubic meter – 33,750 lei (337,500 lei x 10%)).

Value at the time of harvesting the wood mass on 5 hectares: 202,500 lei (5 hectares x 30 cubic meters / hectare x 1,500 lei / cubic meter – 22,500 lei (225,000 lei x 10%)).

506,250 lei	**347**	=	**711**	**506,250 lei**
	Agricultural produce / Harvested wood mass		*Revenues associated with the costs of the completed production*	

j.2) entry of wood mass processing after harvesting:

j.2.1) entering the transformation of 100 cubic meters of trees / logs in bark into the category of raw materials to obtain timber (100 cubic meters x 1,350 lei / cubic meter):

135,000 lei	**301**	=	**347**	**135,000 lei**
	Raw materials / Logs in bark		*Agricultural produce / Harvested wood mass*	

j.2.2) entering the consumption of raw materials – logs in bark:

135,000 lei	**601**	=	**301**	**135,000 lei**
	Raw materials		*Raw materials / Logs in bark*	

j.2.3) entering a quantity of 80 cubic meters of timber obtained – finished products, measured at a unit production cost of 2,800 lei / cubic meter:

224,000 lei	**345**	=	**711**	**224,000 lei**
	Finished goods / Timber		*Revenues associated with the costs of the completed production*	

j.3) derecognition of 5 hectares from the oak forest as a result of deforestation by cutting down all the trees:

Derecognition value of the bearer biological asset: 148,500 lei (5 hectares x 29,700 lei (value at the end of year N+3)).

148,500 lei	**6571**	=	**2411**	**148,500 lei**
	Losses from the fair value measurement of bearer biological assets		*Bearer biological assets measured at fair value / Oak forest*	

k) entry of the harvest in March year N + 4 of agricultural produce – wood mass for fire and their capitalization by sale:

k.1) entry of the harvest in March year N + 4 of agricultural produce – wood mass for fire (IAS 41.13):

Value at the time of firewood mass harvesting: 1,350 lei (5 cubic meters / hectare x 300 lei / cubic meter – 150 lei (1,500 lei x 10%)).

1,350 lei	**347**	=	**711**	**1,350 lei**
	Agricultural produce / Firewood		*Revenues associated with the costs of the completed production*	

k.2.) entry of the receivable from the sale of firewood – agricultural produce: 2,500 lei (5 cubic meters / hectare x 500 lei / cubic meter).

2,500 lei	**4111**	=	**7017**	**2,500 lei**
	Customers		*Sales of agricultural produce*	

k.3) writing off agricultural produce – sold firewood:

1,350 lei	**711**	=	**347**	**1,350 lei**
	Revenues associated with the costs of the completed production		*Agricultural produce / Firewood*	

l) measurement at the end of the reporting period (year) N + 4 of biological assets and agricultural lands:

l.1) bearer biological assets measured at fair value – Oak forest (IAS 41.12):

Value at the end of the period of the bearer biological asset: 1,296,000 lei (45 hectares x (49,000 lei – 17,000 lei (land) – 3,200 lei) (32,000 lei x 10%)).

Measurement losses: 40,500 lei (1,296,000 lei – 1,336,500 lei (value at the end of the year N+3) less the derecognition of the 5 hectares cut down entirely).

40,500 lei	**6571**	=	**2411**	**40,500 lei**
	Losses from the fair value measurement of bearer biological assets		*Bearer biological assets measured at fair value / Oak forest*	

l.2) bearer biological assets measured at fair value – Chestnut plantation (IAS 41.12):

Value at the end of the period of the bearer biological asset: 256,500 lei (15 hectares x (36,000 lei – 17,000 lei (land) – 1,900 lei) (19,000 lei x 10%)).

Measurement gains: 13,500 lei (256,500 lei – 243,000 lei (value at the end of the year N+3)

13,500 lei	**2411**	**=**	**7571**	**13,500 lei**
	Bearer biological assets measured at fair value / Chestnut plantation		*Gains from the fair value measurement of bearer biological assets*	

l.3) bearer plants measured at cost – Winegrowing plantation (IAS 16.30):

Value at the end of the period of bearer plants: 90,000 lei (20 hectares x 4,500 lei).

Recognition value of bearer plants: 100,000 lei (20 hectares x 5,000 lei).

Impairment losses: 10,000 lei (90,000 lei – 100,000 lei (cost of the 20 hectares with vine))

Impairment of bearer plants recognized at the end of the reporting period (year) N+3: 20,000 lei

10,000 lei	**2918**	**=**	**7813**	**10,000 lei**
	Impairment of bearer plants		*Reversal of impairment losses on non-current assets, of real estate investments and bearer biological assets measured at cost*	

l.4) agricultural land measured at revalued value – Freehold land (IAS 16.31):

Value at the end of the period of agricultural lands: 1,445,000 lei (85 hectares x 17,000 lei).

As there were no changes in the revalued amount, the agricultural lands will be reported at the revalued amount at the end of the reporting period (year) N + 3.

m) entry of the sale in October N + 5 of the biological assets and agricultural lands to which they are physically connected (IAS 41.25):

m.1) entry of the receivable for the sale of bearer biological assets – Oak forest and the related agricultural land: receivable from the sale of bearer biological assets: 420,000 lei (10 hectares x (60,000 lei / hectare – 18,000 lei).

600,000 lei	**461**	**=**	**%**	**600,000 lei**
	Sundry debtors		**7573**	**420,000 lei**
			Revenue from the disposal of bearer biological assets	
			7583	**180,000 lei**
			Proceeds from disposal of tangible and intangible assets and other capital transactions	

m.2) writing off the sold bearer biological asset and the related agricultural land (derecognition):

m.2.1) Value of the sold biological asset: 288,000 lei (10 hectares x 28,800 lei / hectare).

288,000 lei	**6573**	**=**	**2411**	**288,000 lei**
	Transfer of bearer biological assets		*Bearer biological assets measured at fair value / Oak forest*	

m.2.2) Value of the sold land: 170,000 lei (10 hectares x 17,000 lei / hectare).

170,000 lei	**6583**	**=**	**2111**	**170,000 lei**
	Net value of tangible and intangible assets disposed of and other capital transactions		*Freehold land / Oak*	

m.3) entry of the receivable from the sale of bearer plants – Winegrowing plantation and the related agricultural land: 72,000 lei (3 hectares x 24,000 lei / hectare).

72,000 lei	**461**	**=**	**7583**	**72,000 lei**
	Sundry debtors		*Proceeds from disposal of tangible and intangible assets and other capital transactions*	

m.4) writing off the sold bearer plants and the related agricultural land (derecognition):

m.4.1) Value of the sold bearer plants: 15,000 lei (3 hectares x 5,000 lei / hectare (cost of 1 hectare with vine)).

Monthly impairment per hectare of vine: 20 lei (400 lei / 20 hectares).

Cumulative impairment during October N+3 – September N+5: 1,440 lei (3 hectares x 20 lei / month x 24 months).

15,000 lei	**%**	=	**218**	**15,000 lei**
1,440 lei	**2818**		*Bearer plants / Winegrowing plantation*	
	Depreciation of bearer plants			
13,560 lei	**6583**			
	Net value of tangible and intangible assets disposed of and other capital transactions			

m.4.2) Value of the sold land: 51,000 lei (3 hectares x 17,000 lei / hectare).

51,000 lei	**6583**	=	**2111**	**51,000 lei**
	Net value of tangible and intangible assets disposed of and other capital transactions		*Freehold land / Winegrowing*	

m.4.3) return to income of the impairment adjustments left without object, related to bearer plants as a result of their sale: 1,500 lei (3 hectares x 500 lei / hectare)

1,500 lei	**2918**	=	**7813**	**1,500 lei**
	Impairment of bearer plants		*Reversal of impairment losses on non-current assets, of real estate investments and bearer biological assets measured at cost*	

m.5) the transfer of the revaluation reserve related to the sold agricultural land to reported result: 26,000 lei (13 hectares x 2,000 lei / hectare).

26,000 lei	%	=	**1175**	**26,000 lei**
20,000 lei	**1052**		*Retained earnings due to surplus on revaluation reserves*	
	Reserves from revaluation of tangible assets / Freehold land Oak			
6,000 lei	**1052**			
	Reserves from revaluation of tangible assets / Vineyard land			

2. (5.) Conclusions and proposals

The fair value we used to measure immature inventory-like biological assets, in the examples presented, is the one that they (in our case lambs) have at the date of capitalization (sale, slaughter, etc.) and not at the time of their birth. As a rule, at the time birth, living animals (e.g. lambs, piglets, calves, foals, etc.) do not have market prices available on the market and a fair value measurement cannot be made reliably. (IAS 41.30) Newborn animals cannot survive separated from the female that gave them birth. The exception is represented by hatched chickens that can survive without the living (bird) or mechanical (incubator) hatchery.

On a statistical basis, it is possible to bring up to date (at the moment of the initial recognition at fair value) the trading price and the costs associated with it at the time of capitalizing inventory-like biological assets, as a result of the biological transformations they underwent in a relatively short time (1 month - 12 months) or even longer.

In the same train of thought, the measurement of the biological assets even if done periodically by measuring the weight gain (biological transformation) is still not relevant as the prices used in the measurement of these weight gains are not validated by an active market and are not available (for example, no one buys an animal, calf, lamb, etc. that still cannot feed on its own or does not have the weight necessary to be slaughtered); they essentially represent the costs borne by the entity with the biological transformation of those biological assets.

The same reasoning can be used to measure plants from agricultural crops at initial recognition and after recognition as immature inventory-like biological assets or other plantations. For example, one hectare of land on which a corn crop has been set up is not intended for sale on the date of crop establishment. Just as a Christmas tree plantation cannot be reliably measured on the basis of fair value at initial recognition or later until the time of harvest.

Example. *At the end of the reporting period (year) N, a forestry entity has a plantation of 1,000 fir trees to be capitalized as Christmas trees over 3 years, because for their current state*

there is no active market. The market price of a fir tree sold as a Christmas tree, less the costs to sell is currently 100 lei, and the annual rate of price increase is estimated to be 5%, given the limitation of trees cutting. The value of the forestry entity's plantation at the end of the reporting period (year) N would be 100,000 lei (1,000 pieces x 100 lei / piece).

Analyze. IAS 41 Agriculture originally stipulated for, in paragraphs 17 to 21 (now deleted), that in order to estimate the fair value one should use the present value of the net cash flows estimated to be generated from the sale of fir trees, taking into account, as a discount rate, the annual price growth rate of 5%

Thus, in the financial statements at the end of the reporting period N, the fir plantation, less the land to which it is connected, will be valued as follows: the present value of the net cash flows: 86,385 lei (100,000 lei / (1 + 5%)^3).

Other studies and articles we have cited from the literature [25] present a number of shortcomings related to the subjective way of determining the fair value for a number of biological assets, the lack of an active market for determining prices, determining the fair value of consumable assets for example: *laying hens*) provided that they are used to obtain agricultural produce and not to be sold. We can also add the cost-benefit ratio to the estimation of fair value and selling costs for financial reporting to the detriment of historical cost, much easier to establish and with a low dose of subjectivism, as well as increasing the tax burden on unrealized income, but recognized in profit or loss.

At the same time, another disadvantage of recognizing differences in changes in fair value less costs to sell in profit or loss is the increasing volatility of results. In addition, the recognition of unrealized income in profit or loss is very likely to be used for dividend distribution.

In the same train of thought, would also be the reclassification under certain logging conditions of trees grown for timber from the category of consumable (inventory-like) biological assets to the category of bearer biological assets, when some trees are cut but the forest / plantation is not abolished.

All this may represent grounds for a future revision of IAS 41 *Agriculture*.

3. (6.) Bibliography

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