

Tenth lecture: Depreciation and impairment of tangible and intangible fixed assets

1- Depreciation of tangible and intangible fixed assets

In application of the principle of linking income to expenses, the value of tangible or intangible fixed asset is distributed over a determined period of time called the period of use or period of its use, and this distribution is called "amortization", or “**depreciation**”, that is, the part of the fixed asset cost which is deducted from the **results** in exchange for its use in the activity of the entity even in the absence of profits and in each financial year and from **the beginning of its operation**.

1-1-Definition of depreciation

The Algerian financial accounting system has defined amortization as the consumption of economic benefits linked to a tangible or intangible asset, and is accounted for as an expense.

From this definition, it can be said that depreciation is the decrease in the value of tangible and intangible assets resulting from their use or obsolescence. This decrease is recorded at the end of the financial year in the depreciation expense account to **renew these fixed assets after the end of their useful life with new fixed assets**.

1-2-Depreciation methods

The financial accounting system stipulates four methods for calculating depreciation, which are:

- **Linear depreciation method:** a fixed charge over the useful life of the asset
- **Declining Depreciation Method:** A decreasing charge on the useful life of the asset
- **Incremental depreciation method:** An increased charge on the useful life of the asset
- **Units of production method:** a charge based on the expected use or production of the asset

According to the program scheduled for the first year, the study of depreciation methods is limited to linear depreciation only.

Linear depreciation method

This is the most commonly used method, known as the equal charges method, and to achieve the depreciation schedule we use the following rules:

- **The depreciable amount** is equal to the **acquisition cost** of the fixed asset less its **residual value**.

- **The residual value** is the net amount of the fixed asset at the end of its useful life (period of use), and it is usually non-existent.

- **Linear depreciation rate t** : If n is the benefit period, then the linear depreciation rate is : $t = \frac{100}{n}$

- **Annual amortization A** : If V_0 is the depreciable amount then :

$$A = \frac{V_0}{n} \quad \text{or} \quad A = V_0 \times \frac{t}{100}$$

- **The accumulated depreciation** is equal to the **sum** of the depreciation applied to a fixed asset at the end of the cycle concerned.

- **Net accounting value (NAV)** is equal to the depreciable amount **minus** accumulated depreciation.

Example:

On 14/03/2012, a truck was acquired at a cost of 600,000 DZD its useful life is 05 years, and it has no residual value.

Required prepare the truck depreciation table according to the linear depreciation method and record the depreciation for the year 2012.

the solution

The depreciable amount is: 600 000 DZD.

Depreciation rate: $t = \frac{100}{5} = 20 \%$

Depreciation installment for the year 2012 (10 months) :

$$A = 600000 \times 20\% \times \frac{10}{12} = 100000 \quad \text{or} \quad A = \frac{600000}{5} \times \frac{10}{12} = 100000$$

Depreciation installment for a full year (from 2013 to 2016):

$$A = 600000 \times 20\% = 120000 \quad \text{or} \quad A = \frac{600000}{5} = 120000$$

Depreciation installment for the year 2017 (two months only):

$$A = 600000 \times 20\% \times \frac{2}{12} = 20000 \quad \text{or} \quad A = \frac{600000}{5} \times \frac{2}{12} = 20000$$

Therefore, the amortization table for the truck is as follows:

the years	Depreciable amount	Annual amortization A	Accumulated depreciation	net accounting value (NAV)
2012 (10 months)	600 000	100 000	100 000	500 000
2013	600 000	120 000	220 000	380 000
2014	600 000	120 000	340 000	260 000
2015	600 000	120 000	460 000	140 000
2016	600 000	120 000	580 000	20 000
2017 (02 months)	600 000	20 000	600 000	0

Accounting recording of the depreciation installment for the year 2012

31/12/2012				
681	2818	allocations to depreciation, and losses in value Truck depreciation (Truck depreciation installment related to the year 2012)	100000	100000

note:

If the acquisition of the fixed asset takes place between the first day and the fifteenth day, the entire month is counted when calculating the depreciation charge.

If the acquisition of the asset takes place after the fifteenth day, this month is not counted in the depreciation charge.

2- Impairment of tangible and intangible fixed assets

According to the evaluation rules developed by the financial accounting system, the entities must ensure, at the date of each inventory, and for each fixed asset (**depreciable or non-depreciable**), if there is any indication that the fixed asset in question has significantly lost its value, and to be sure of this, an impairment test must be done in order to determine the existence and the amount of the loss in value.

2-1- Impairment definition

Impairment or Loss of value is the amount in excess of the **net accounting value** of its **recoverable amount**.

2-2- Impairment estimate

At the inventory date, the entity estimates and examines whether there is any indication that an asset has lost its value, and if such an indication exists, the entity must estimate the recoverable amount of this asset, and the loss of value of the asset is determined by the difference between its net accounting value and its recoverable value. This means :

Loss of value = Net Accounting Value (NAV) - Recoverable Value (RV)

According to the program, and for simplification, in the first year, the **recoverable value** of any fixed asset is considered as its **net selling price**.

The net selling price of an asset is the amount obtainable from the sale of that asset during a transaction under normal conditions between knowledgeable and consenting parties, less exit costs;

$$\text{Net Selling Price (NSP)} = \text{Selling Price (SP)} - \text{Exit Costs}$$

In the event that there is an indication of a loss of value, the existence of this loss is confirmed by comparing **the recoverable value** with **the net accounting value**, according to the following two cases:

The first case: there is a loss of value if it is

$$\text{Net Accounting Value (NAV)} > \text{Net Selling Price (NSP)}$$

The second case: There is no loss of value if:

$$\text{Net Accounting Value (NAV)} < \text{Net Selling Price (NSP)}$$

2-3- Impairment accounting registration

When a loss in value is proven for a fixed asset, account 29xx Losses in value of the fixed asset concerned is credited with the amount of this loss, by debiting account 681 allocations to depreciation, provisions and losses in value of the same amount

31/12/Year				
681	29xx	allocations to depreciation, provisions and losses in value Impairment of the fixed asset concerned (Impairment recording for the asset concerned)	xx	xx

The following sub-accounts can be used:

290 Loss of value on intangible fixed assets.

291 Loss of value on tangible fixed assets.

Example 2: (continued with the first example)

Suppose that on 12/13/2014 there was an indication that the truck had lost its value, so its selling price was estimated at 230,000 DZD, while the exit costs were estimated at 22,000 DZD.

Required:

- 1) Calculate the loss of value of the truck.
- 2) The accounting recording of the loss of the value of the truck.

the solution:

1) Calculate the loss of value of the truck

On 12/31/2013 and after calculating the depreciation for the truck, we have:

- The net accounting value of the truck: 260,000 DZD (from the amortization table)

Net Selling Price (NSP) = Selling Price (SP) - Exit Costs.

- Net selling price = 230,000 - 22,000 = 208,000 DZD.

Since the net accounting value **is greater** than the net selling price

$$260,000 > 208,000$$

It means that: **there is a loss of value** for the truck:

$$\text{Loss of value} = 260,000 - 208,000 = 52,000 \text{ DZD}$$

2) Accounting recording of the loss of the value of the truck

		31/12/2013		
681	29182	allocations to depreciation, and losses in value Impairment of the truck (Impairment recording for the truck)	52000	52000

2-4-Impact of the loss of value on the depreciation plan

When a loss of value of a fixed asset is proven, this affects the depreciation plan for this fixed asset so that it must be adjusted for the remaining period, by calculating new depreciation **allowances** for the remaining based on the depreciable amount after the loss of the recorded value.

Example 3: (Continued with the first and second examples)

After recording the loss of value that was calculated in the second example.

Required:

Preparing the modified depreciation plan for the truck.

the solution:

The depreciation table before recording the loss of value was:

the years	Depreciable amount	Annual amortization A	Accumulated depreciation	net accounting value (NAV)
2012 (10 months)	600 000	100 000	100 000	500 000
2013	600 000	120 000	220 000	380 000
2014	600 000	120 000	340 000	260 000
2015	600 000	120 000	460 000	140 000
2016	600 000	120 000	580 000	20 000
2017 (02 months)	600 000	20 000	600 000	0

The depreciation table after recording the loss of value becomes as follows:

the years	Depreciable amount	Annual amortization	Accumulated depreciation	loss of value	net accounting value (NAV)
2012 (10 months)	600 000	100 000	100 000		500 000
2013	600 000	120 000	220 000	96000	380 000
2014	600 000	120 000	340 000	52000	208 000
2015	208 000	96 000	436 000		112 000
2016	208 000	96 000	532 000		16 000
2017 (02 months)	208 000	16 000	548 000		0