IPSAS 12 – Inventories as adopted by the Maltese Government

Guidelines

IPSAS Implementation Team

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Table of Contents

Introduction 3
A. What are inventories? 4
B. Measurement of inventories 7
C. Cost Methods 13
D. Subsequent Measurement.. 14
E. Disclosure 20
Glossary 24

DRAFT

Introduction

1. IPSAS 12 Inventories – as adopted by the Maltese Government

1.1 These guidelines refer to the Inventories accounting standard **as adopted by the Maltese Government**. This version is based on the original IPSAS 12 developed by the International Public Sector Accounting Standards Board (IPSASB). Modifications were made to the original standard to make it more applicable to the local context.

2. Scope

2.1 These guidelines were prepared to enable the users to:

2.1.1 Develop a working-level knowledge of the principles contained in the accounting standard; and

2.1.2 Understand and appreciate the major challenges and benefits resulting from the implementation of IPSAS 12[1].

2.2 The standard applies to all inventories except for inventories held in the following cases:

2.2.1 Work in progress arising under IPSAS 11 – Construction contracts;

2.2.2 Financial instruments (IPSAS 28 and IPSAS 29);

2.2.3 Biological assets related to agricultural activity and agricultural produce at the point of harvest (IPSAS 27); and

2.2.4 Work-in-progress of services to be provided for no or nominal consideration directly in return from the recipients.

3. Target Audience

3.1 These guidelines are designed for finance and non-finance employees employed in Ministries and Departments of the Government of Malta.

4. Guidelines Structure

4.1 These guidelines provide a detailed overview of all the principles contained in the standard, including inventory identification, recognition and measurement (initial and subsequent), and disclosure of inventory information.

[1] References to IPSAS 12 or any other IPSAS shall be taken as meaning 'as adopted by the Maltese Government'

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A. What are inventories?

Inventories are the raw materials, work in progress and finished goods that are considered to be the assets that are ready or will be ready for sale or distribution.

1. **Inventories are defined as those assets:**

    - in the form of materials or supplies to be consumed in the production process;
    - in the form of materials or supplies to be consumed or distributed in the rendering of services;
    - held for sale or distribution in the ordinary course of operations; or
    - in the process of production for sale or distribution.

2. **The below table shows the items of inventories together with respective examples:**

Items	***Examples***
a) Goods purchased and held for resale.	• Land or property held for sale.
b) Produced goods as work in progress or final goods produced.	• Educational and course materials; • Printed material as a finished product and work in progress held by the Government Printing Press.
c) Materials and supplies to be used during the production process.	• Reams of paper/ink held by the Government Printing Press; • Spare parts for plant and equipment; • Maintenance materials.
d) Produced and purchased goods held for distribution at no charge or at a nominal charge.	• Books held by the Department of Information.
e) Inventories related to the provision of services rather than goods purchased and held for resale or goods manufactured for sale.	• Uniforms held by the Armed Forces of Malta and Police.
f) Instances where the entity controls the right to create and issue assets such as revenue stamps (adhesive labels used to collect taxes or fees)	• Licensing materials held by the Ministry for Transport and Infrastructure; • Special labels used on documents, tobacco, alcoholic drinks, medicines;

DRAFT

	• Firearms licences materials held by the Police Department.
g) Strategic stockpiles of reserves (e.g. fuel, food, medicines) for use in emergencies.	• Fuel at Police HQ; • Stocks of medicinal products held by the Central Procurement and Supplies Unit (CPSU) within the Ministry for Health; • Ammunition held by the Ministry for Home Affairs and National Security.

3. Inventories are recognised as assets when the following criteria are met:

- are under the **control of the entity**;
- are **results from a past event** such as acquisition or production or donation;
- it is probable that **future economic benefits or service potential** associated with the item will flow to the entity; and
- the **cost** or **fair value** of the inventory can be **measured reliably**.

Initial recognition occurs on the day when the risks and rewards of ownership are transferred to the entity; being typically the delivery date of the inventory.

4. In the ambit of the Central Government Entities, when recognising an asset the focus shall be on the service potential rather than on the future economic benefits.

4.1 **Future economic benefits** are the potential to contribute to the flow of cash or cash equivalents to the entity and in case of the Central Government Entities, the future economic benefits are also used to provide goods and services in accordance with the entities' objectives.

4.2 **Service potential** is the capacity of an asset to contribute directly or indirectly to achieving the objectives of the entity. Such objectives may include delivering a service to the public without receiving any economic return. Thus assets which are used to deliver goods and services but do not directly generate cash inflows are often described as embodying 'service potential'.

5. Example 1: Initial recognition of inventory

The Education Department (Educ) ordered 200 books for €1,000 on 1st August 2016. The ordered books will be used for the needs of the Education Department. The items were delivered on 14th August 2016.

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The accounting treatment is as follows:

- On the order date i.e. 1st August 2016, no accounting transaction is recorded.
- On the delivery date i.e. 14th August 2016; the following double entry is recorded:

Debit Inventories	€1,000
Credit Creditor	€1,000
Being the recognition of the inventory received and the relevant liability.	

If, in the same example as above, the department **paid a deposit of €100 before delivery**, the following double entries are recorded:

- On payment of deposit

Debit Other receivables – payments on account (advance payment)	€100
Credit Bank	€100
Being a deposit paid prior to delivery of the goods.	

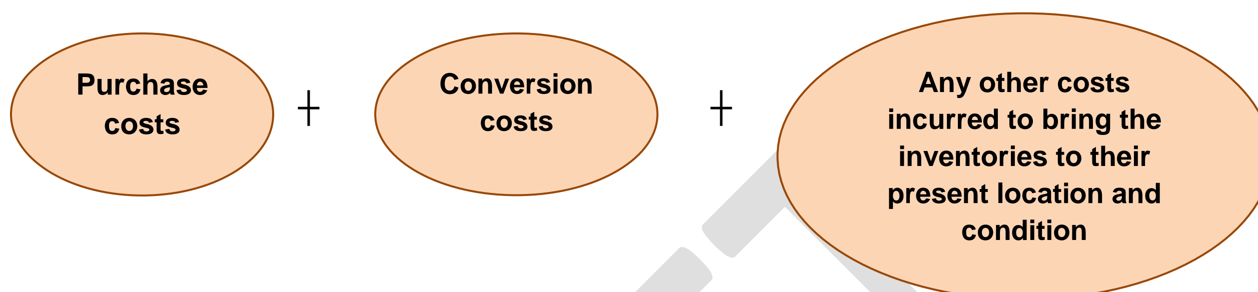
- On the delivery date (that is when the risks and rewards of ownership are transferred to Educ); the items will be recognised as inventory, hence as an asset and the purchase invoice is posted in the supplier's account

Debit Inventories	€1,000
Credit Other receivables – payments on account (advance payment)	€100
Credit Creditor	€900
Being the recognition of inventories as an asset upon delivery.	

B. Measurement of inventories

1. **Net realisable value (NRV)** is the estimated selling price in the ordinary course of operations less the estimated costs of completion and the estimated costs necessary to make the sale or distribution.

2. Inventories are initially recognised at cost, as follows:



2.1 Purchase cost is inclusive of the:

- purchase price of finished goods/raw materials;
- non refundable taxes and duties;
- transport costs in getting the items to the entity;
- insurance costs;
- handling, and
- other direct costs involved directly in the acquisition of the finished goods, materials and supplies.

The purchase cost is calculated net of recoverable VAT, discounts, returns and allowances from gross purchases. In case when the inventory is imported and paid in foreign currency, the cost is converted using the exchange rate at the date of transaction.

2.1.1 Example 2: Purchase cost

The CPSU within the Ministry for Health bought medicinal products for €100,000 on 1st August 2016. The total transport costs and handling charges amounted to €5,000, and non-refundable import duties amounted to €2,000. The items were delivered on 14th August 2016.

The total cost of inventory:	€
Purchase price	100,000
Transport & Handling charges	5,000
Import duties	2,000
Amount paid to suppliers / Total inventory cost	**107,000**

On the delivery date, that is when the risks and rewards of ownership are transferred, the items will be recognised as inventory, hence as an asset. The double entry will be as follows:

Debit Inventory	€107,000
Credit Bank/Creditor	€107,000
Being the recognition of inventory at cost.	

2.1.2 The following shall be **deducted** from the purchase costs:

- Volume Rebates:

  Refunds from the purchase price by a supplier, based on the purchase of a specified quantity or value of goods within a specified period Volume rebates occur when the agreement states that a discount will be granted only following the purchase of a certain quantity. For example, if the department buys more than 2,500 units a refund of €1 will be given for all the units bought.

- Trade Discounts:

  Trade discounts occur when the discount is known beforehand. For example buying a large quantity of an item at a price which is 10% lower than standard.

- Deferred settlement terms:

  An arrangement in which the buyer is allowed to start making payments at some specified time in the future. Since the payments shall be made over an extended period in the future, the time value of money, if material, shall be taken into account. The method to be used to determine the time value of money is the effective interest rate method. This is done by discounting the future cash flows back to a present value. This present value is then recognised as the cost of inventory. The **difference** between the purchase price at normal credit terms and the amount actually paid shall be recognised as an interest expense over the period of the financing.

DRAFT

The double entries will be as follows:

Debit Inventory	XX
Credit Creditor	XX
Being the recognition of inventory at cost at the time of purchase	

Debit Interest expense	XX
Credit Creditor	XX
Being the recognition of interest expense during the period between purchase and deferred settlement.	

Debit Creditor	XX
Credit Cash/Bank	XX
Being settlement of payment including interest paid in view of the deferred settlement terms.	

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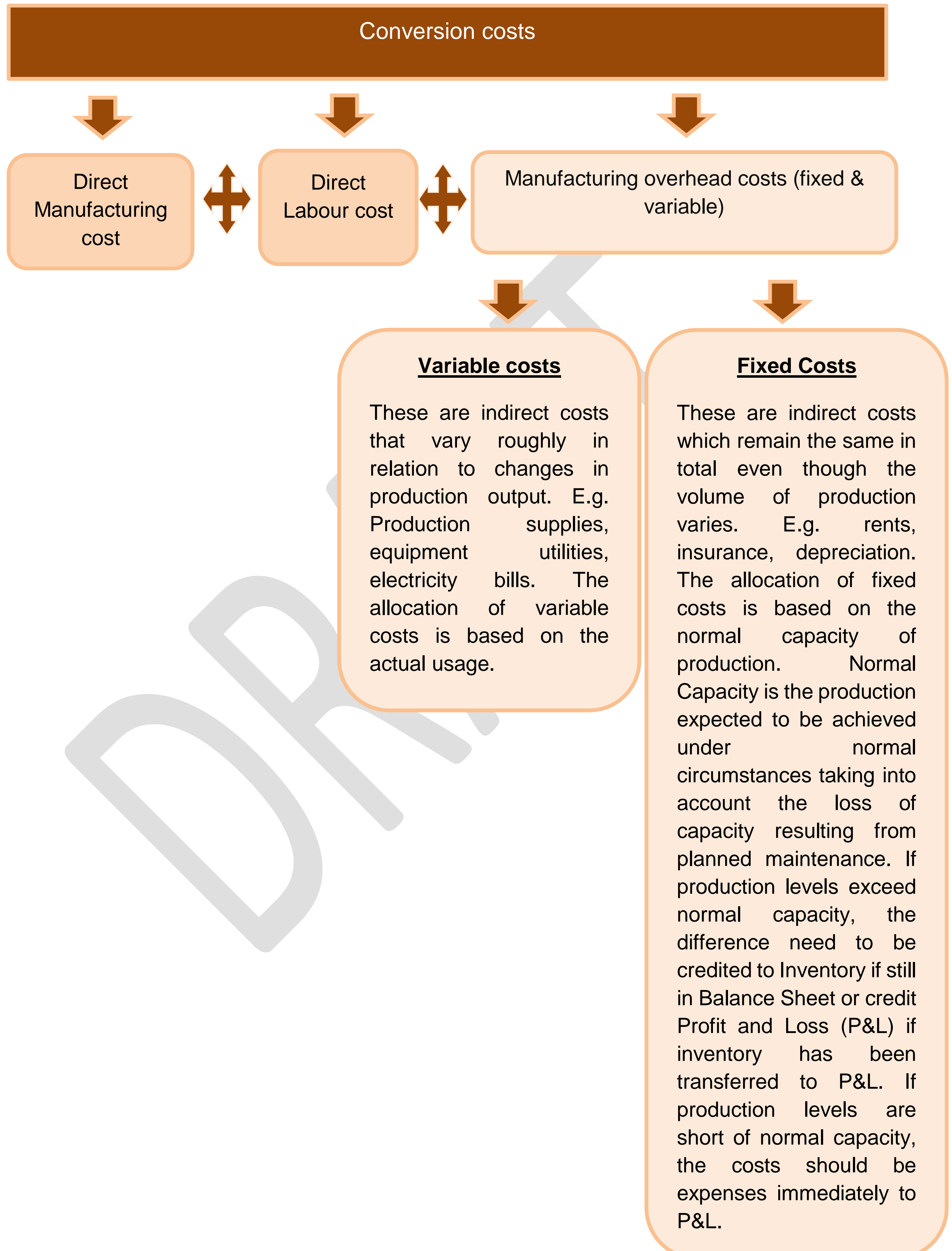
2.2 Conversion costs are defined as the necessary costs to convert raw materials into products, and can be expressed as follows:



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2.3 Other costs

In addition to the above, the entity may incur extra costs in bringing the inventories to their present location and condition, e.g. packaging costs in preparing the inventory for sale or distribution.

2.3.1 Other expenses **omitted** from the cost of inventories include:

- selling expenses;
- administrative expenses which are not required in bringing the inventory to their present location and condition;
- storage costs, unless the items will be processed further; and
- abnormal[2] amounts of wasted material and labour.

2.4 Inventories acquired at **no cost** shall be recognised at their **fair value** as at date of receipt. **Fair value** is an approximation of the cost, and the value can be determined by obtaining the value of a similar inventory item in the same condition.

2.5 There may be instances when a government department/ entity acts as a **service provider** [for which such services are being charged for] to another department and/or the general public, as, for example, in the case of the Management Efficiency Unit, Armed Forces of Malta and Civil Protection Department. The inventory in this regard includes the costs of service for which the related revenue has not yet been recognised in the accounts. The costs of services include:

- cost of personnel directly involved in providing the service (costs not directly engaged in providing the service are recognised as an expense when incurred; and
- attributable overheads.

The cost of the inventory, in this case, does not include profit margins or other non-attributable overheads.

2.5.1 Example 3: Valuing the cost of inventory

The Civil Protection Department (CPD) provides operational services to third parties, during local village feasts and other private events and promotions. CPD's costs for providing this service amount to€50 per hour. CPD provides such service to third parties not for free but at a price which is not lower than €50.

As at year end the CPD's revenue will be equivalent to the service fee received or receivable, whilst the valuation of the inventory (work-in-progress) will be the cost of services rendered not yet billed.

[2] An unusual cost whose occurrence is usually irregular and unexpected and/or due to some abnormal situation of the production or operation.

The records held by the CPD show that as at year end there were 200 service hours left unbilled as work in progress rendered out to paying clients. The closing inventory value shall be equal to these unbilled hours multiplied by the cost rate per hour as follows:

(200 hours x €50) = € 10,000.

The journal entry at reporting date will be as follows:

Debit Inventory (work in progress)	€ 10,000
Employee Cost	€ 10,000
Being the recognition of inventory for work in progress.	

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C. Cost Methods

1. The cost of inventories of items that are **not ordinarily interchangeable**, and goods or services produced and segregated for **specific projects**, shall be assigned by specific **identification** of their individual costs. Specific identification of costs means that specific costs are attributed to the identified items of inventory.

2. The cost of inventories, other than those mentioned above, shall be assigned by using solely the **first-in, first-out (FIFO)** cost valuation method.

First-in, First-out (FIFO)

Inventories are valued on the assumption that the items are issued out of inventory in the order in which they were produced or purchased.

3. **Example 4: Calculating closing inventory:**

On 1st April 2016, the Government Printing Press (GPP) held 2,000 units of Book A valued at €5 each. Additional 600 units of Book A were produced in May 2016 for €6 per unit and 500 units were produced in July at €6.5 per unit.

The GPP sold 1,500 units and 400 units during June and September accordingly. As at end of the period, 1,200 units were still held by GPP.

The closing inventory using the FIFO valuation method is determined as follows:
FIFO formula:

(100 units [1,200 – 500 – 600] x € 5)	€500
(600 units x € 6)	€3,600
(500 units x € 6.5)	€3,250
Cost of Closing Inventory	**€ 7,350**

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D. Subsequent Measurement

1. Inventory is measured at lower of cost and net realisable value. The cost of inventories may not be recoverable if these inventories are damaged, if they have become wholly or partially obsolete, or if their selling prices have declined.

2. The cost of inventories may also not be recoverable if the estimated costs of completion or the estimated costs to be incurred to make the sale, exchange, or distribution have increased.

3. The practice of writing inventories down below cost to net realisable value is consistent with the view that assets are not to be carried in excess of the future economic benefits or service potential expected to be realized from their sale, exchange, distribution, or use.

4. Therefore NRV may be less than cost when there is/are:

a. increases in costs or a fall in selling prices;
b. a physical deterioration in the condition of inventory;
c. obsolescence of products; and
d. errors in production or purchasing.

5. Example 5: Inventory written down to NRV

The Department of Information (DOI) imports books at €6 per unit, which it then sells at €8.5 per unit. During the second quarter of the reporting period, due to market conditions, the product's cost price dropped to €3 per unit and as a result, the market price fell and the selling price was reduced to €5.5 per unit.

At the end of the financial year (31st December 2015), the entity held 2,000 units of this material in stores imported at €6 per unit.

Therefore:

- the NRV of the units bought at €6 per unit is now €5.5 per unit;
- the inventory carrying amount before any write-down at the reporting date was €12,000 (2,000 units x €6).;
- the inventory will be written down to its NRV of €11,000 (2,000 units x €5.5) because the new selling price is lower than cost (and therefore the value of inventories held is less than cost and equal to its NRV, that is the revised selling price);
- the difference of €1,000 is recognised as an expense for the period.

DRAFT

This information will be disclosed as follows:

Extract from the Statement of Financial Performance	
Expenditure	
Cost of Sales [Loss on inventory]	€ 1,000

Extract from Statement of Financial Position	
Current Assets	
Inventory	€ 11,000

Extract from Notes to the financial statements
At the end of the reporting period, the value of the finished goods was written down to its Net Realisable Value following the fall in the selling price of the goods below cost. The fall in value amounts to €1,000 and is being recognised as part of the Cost of Sales (inventory cost) in the Statement of Financial Performance.

6. Example 6: Inventory written down to NRV

Inventory, having a value at cost of €10,000, can only be sold at the end of the financial year, for €8,000, after including an additional €1,000 expense in sales commissions and shipping expense.

The NRV is €7,000 (€8,000 less €1,000 selling expenses).

Extract from Statement of Financial Position	
Current Assets	
Inventory	€ 7,000

Extract from the Income Statement	
Expenditure	
Cost of Sales [Loss on inventory]	€ 3,000

Extract from Notes to the financial statements
At the end of the reporting period, the inventory was written down to its Net Realisable Value due to a decrease in the selling price. The additional shipping expenses have also been taken into consideration when estimating the NRV. The fall in value amounts to € 3,000 and is being recognised as part of the Cost of Sales [inventory cost] in the Statement of Financial Performance.

DRAFT

7. A write-down of inventories normally takes place on an **item-by-item basis** or where appropriate similar items are grouped together. The grouping is acceptable for items in the same product line, but it is not acceptable to write-down inventories based on a classification of inventory (e.g. finished goods).

8. **Fluctuations of price or cost** should be taken into account if they relate directly to events after the balance sheet date, which confirm conditions existing at the end of the period.

9. **Reassessment of the NRV** and comparison with cost should be performed at the end of each reporting period. Inventories could be held for periods longer than one year in situations where all the following are applied:

   - ✓ They were written down to NRV in a previous financial year;
   - ✓ They are still held at the end of the following financial year; and
   - ✓ The NRV in the subsequent year is greater than it was in the previous year (this may be possible when selling prices have fallen in the past and then risen again).

   If the above conditions are met, then the previous write-down must be reversed to the extent that inventory is then valued at the lower of cost and the new NRV.

10. Management shall also consider the **purpose** for which the inventory is being held. In a situation where inventory is being held to satisfy a **firm contract** or as part of a **service contract** [the contract selling price needs to be equivalent to the entire work-in-progress] based on a **fixed contract price**, the NRV of those inventories would be equivalent to the **contract selling price**. On the other hand, the NRV of the excess quantity of inventory held will be based on the general selling price and not the contract price.

Example:

Assuming a service contract with a fixed contract price of €100 and 50% of the materials and labour necessary to fulfil the contract have already been incurred. The cost for the 50% incurred was of €65. Given that the contract is 50% complete, the NRV of what is complete does not amount to the €100 contract price (i.e the NRV of

the inventories is not equivalent to the contract selling price). In such case a write-down is required since €65 is less than €100.

11. **Raw materials and supplies** held to be used in the production of inventories will **not** be written down if the finished goods are held to be sold or exchanged **at or above cost**. However, when a decrease in the price of raw materials indicates that the cost of finished goods to exceed the NRV, the raw materials shall be written down to the NRV. In this case, the replacement cost of the materials may be the best estimate of the NRV.

12. Measurement at Cost vs Current Replacement Cost

12.1 An entity may hold inventories for which there are future economic benefits or service potential. However, these inventories do not have the ability to generate cash inflows, e.g. where inventories are distributed **free of charge**.
Thus, where market rates are not applicable for valuing inventories, these are measured at the lower of cost and current replacement cost.

> **Current replacement cost** is defined as the cost incurred to replace an asset at the same or equal value. The replacement cost can change, depending on changes in market value of the asset and any other costs required in preparing the asset for use.

12.2 Example 7: Inventory valued at Current Replacement Cost

The Education Department (Educ) acquired 1,000 lockers at €50 each, to be distributed free of charge to various secondary schools. At the end of the financial period, the department still had 300 units of these items in its stores, while the cost to acquire these lockers is now €35 each.

The value of the remaining units will be written down to the replacement cost of €35 per unit.

The following shall be the journal entries at the end of the financial period:

Debit Expenses (Write-down of inventory) (300 lockers x (€ 50 - € 35))	€ 4,500
Credit Inventory	€ 4,500
Being the write-down of inventory to its current replacement cost.	

DRAFT

This information will be disclosed as follows:

Extract from Statement of Financial Position	
Current Assets	
Inventory (300 lockers x € 35)	€ 10,500

Extract from Notes to the financial statements	
Current Assets	
Inventories held for distribution	€ 10,500

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13. Recognition as an expense

13.1 Inventories are to be recognised as an **expense** in the following instances:

- When inventories are **sold, exchanged or distributed**, the carrying amount is treated as an expense in the same period in which the corresponding revenue is recognised (if any);

- Any inventory **write-down to NRV or current replacement cost** and any **losses** of inventory shall be recognised as an expense in the period the write-down or loss occurs;

- The amount of any **reversal** of any write-down of inventories, arising from an increase in the NRV, is recognised as a reduction in the amount of inventories recognised as an expense in the period in which the reversal occurs;

- In certain situations inventories may be included in other asset accounts, for example inventory used as a **component** of property, plant and equipment. Such inventory is recognised as an expense over the useful life of that asset. The useful life of the asset will be based according to the normal depreciation of that asset class.

13.2 Example 8: Inventory recognised as an expense

On 1st November 2016, the Education Department purchased 20,000 units of stationery for €50,000, for distribution to primary schools. During December 2016, the department distributed 5,000 of these units. These were distributed at no value. The financial year end is 31st December 2016.

The journal entries are as follows:

As at Date of Purchase:	
Debit Inventory	€ 50,000
Credit Bank	€ 50,000
Being the recognition of inventory at the date of purchase.	

As at Date of Distribution:	
Debit Stationery Expenses (5,000 x (€ 50,000/20,000)	€ 12,500
Credit Inventory	€ 12,500
Being the recognition of inventory at the date of distribution.	

The disclosures are as follows:

Extract from Statement of Financial Performance	
Cost of Sales	
Stationery	€ 12,500

The value of the inventory in hand is **€37,500** since

Purchased 20,000 units @ €2.50 = €50,000
Distributed 5,000 units @ €2.50 = €12,500
Balance 15,000 units @ €2.50 = €37,500

This stationery will be included in inventory as a separate item.

E. Disclosure

1. The notes to the financial statements shall disclose the inventories' carrying amount based on the inventories' classification, such as merchandise, production supplies, finished goods, materials and work-in-progress.

2. The financial statements shall disclose the following:

a. Accounting policies adopted in measuring inventories, including the cost formula used;

b. Total carrying amount of inventories and the carrying amount in the classifications appropriate to the entity;

c. Carrying amount of inventories carried at fair value less costs to sell;

d. Amount of inventories recognised as an expense during the period;

e. Amount of any write down of inventories recognised as an expense in the period;

f. Amount of any reversal of an write-down that is recognised in the statement of financial performance;

g. Circumstances or events that led to the reversal of write-down of inventories;

h. Carrying amount of inventories pledged as security for liabilities.

3. The amount of inventories recognised as an expense during the period consist of:

a. Those costs previously included in the measurement of inventory that has now been sold, exchanged or distributed;

b. Unallocated production overheads and abnormal amounts of production costs of inventories, and

c. Other costs, such as distribution costs (depending on the circumstances of the entity).

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4. Illustrative disclosure requirements:

Statement of Financial Performance as at 31st December 2013 (extract)			
	Notes	2013 (€)	2012 (€)
Expenses			
Cost of inventory		x	x

Statement of Financial Position as at 31st December 2013 (extract)			
	Notes	2013 (€)	2012 (€)
Current assets			
Inventories	1	x	x

Statement of Cash Flows for the year ended 31st December 2013 (extract)			
	Notes	2013 (€)	2012 (€)
Cash flows from operating activities[3]			
Increase/(Decrease) in inventories		x	x

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[3] The classification of expenses will be based on the nature of expenses.

Extract from Notes to the Financial Statements

Accounting Policies

1. Inventories

Inventories are measured at cost upon initial recognition. To the extent that inventories are received through non-exchange transactions (for no cost or for a nominal cost), the cost of inventories is their fair value at the date of acquisition.

Costs incurred in bringing each product to its present location and condition are accounted for as follows:
- Raw materials: purchase cost using the First-in, First-out cost method
- Finished goods and work in progress: cost of direct materials and labor and a proportion of manufacturing overheads based on the normal operating capacity, but excluding borrowing costs.

After initial recognition, inventories are measured at the lower of cost and net realisable value. However, to the extent that a class of inventories is distributed or deployed at no charge or for a nominal charge, that class of inventories is measured at the lower of cost and current replacement cost.

Net realisable value is the estimated selling price in the ordinary course of operations, less the estimated costs of completion and the estimated costs necessary to make the sale, exchange, or distribution.

Inventories are recognised as an expense when deployed for utilisation or consumption in the ordinary course of the Ministry/Department.

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	2013 €	2012 €
1. Inventories		
Raw Materials	X	X
Work-in-progress	X	X
Finished Goods	X	X
	X	X

At 31 December 2013, €X amount (2012: €X amount) of total inventory was carried at fair value less cost to sell/current replacement cost

The amount of write-down of inventories, recognised as an expense, is €X (2012: €X), which is recognised either as cost of sales or according to the respective expense line item ex. Stationery.

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Glossary

"Accruals-based accounting" Accruals-based accounting is a system of accounting based on the accrual principal, under which revenue is recognised (recorded) when earned, and expenses are recognised when incurred.

''Central Government Entities (CGEs)'' The term CGEs refers only to ministries and departments of the Government of Malta.

"Current replacement cost" Current replacement cost is the cost the entity would incur to acquire the asset on the reporting date.

''Fair Value'' Fair Value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

"First-in, first-out Method (FIFO)" FIFO is an inventory valuation assuming that inventory purchased or manufactured first is sold first and newer inventory remains unsold. Thus, the value of older inventory is expensed, while inventory at the end of the period would be valued at more recent prices.

"Fixed costs" Fixed costs are those costs that do not vary in the short term, irrespective of changes in production or sales levels, or other measures of activity. A fixed cost is a basic operating expense of an entity that cannot be avoided, such as a rent payment.

''International Public Sector Accounting Standards (IPSASs)'' IPSASs are a set of accrual-based accounting standards issued by the IPSAS Board for use by public sector entities around the world in the preparation of financial statements.

"Inventories" Inventories are assets:

a) In the form of materials or supplies to be consumed in the production process;
b) In the form of materials or supplies to be consumed or distributed in the rendering of services;
c) Held for sale or distribution in the ordinary course of operations; or
d) In the process of production for sale or distribution

"Net Realisable Value (NRV)" NRV is the estimated selling price in the ordinary course of operations, less the estimated costs of completion and the estimated costs necessary to make the sale, exchange, or distribution.

"Variable costs" Variable costs are those costs that vary in relation to changes in the volume of activity such as materials and direct labour.

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