

Introduction to Forest Accounts

Session 4: Forest Accounts
National Workshop on the System of Environmental-Economic Accounting (SEEA)

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Question

What are the **forest resources** in Burundi?

Why do forests matter?

Forests cover one-third of the Earth's land mass, serving as critical pillars for both environmental health and human well-being

- the home to over half of the world's terrestrial species
- combating climate change through their natural processes of carbon sequestration
- serve as vital shields against extreme weather conditions, such as storms and floods
- offer invaluable resources and protection for communities that rely on them for their livelihoods and security: provide inputs for construction and the production of paper, furniture and other products, and are a source of fuel



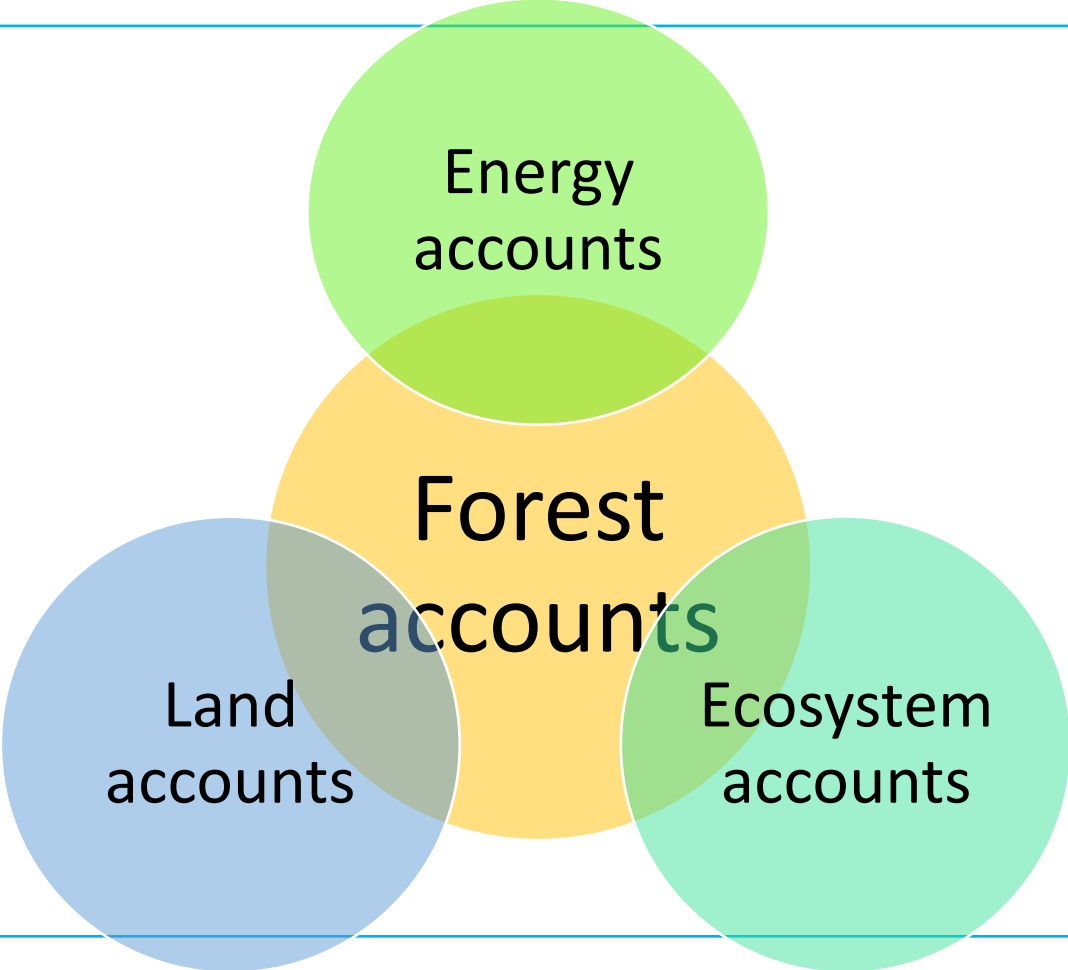
SEEA for Forest Resources: Coverage

FAO Global Forest Resources Assessment considers under forest resources **forest area and stock, including growing stock, above- and below ground biomass, dead wood and carbon**

Therefore, the SEEA for Forest Resources may include accounts such as

- asset accounts for forest land and other wooded land
- asset accounts for timber resources
- flow accounts for timber resources
- ecosystem extent, condition and services accounts that help assess the benefits of forests as an ecosystem (e.g. carbon accounts)

Interlinkages of SEEA modules



SEEA for forest resources at the national level

Global Assessment of Environmental-Economic Accounting 2023

	Number of countries that compiled at least one account in the past five years	Number of countries that compiled physical asset accounts for timber resources
Implementing countries (total)	90	25
Africa	15	...

Countries in Africa that compile physical asset accounts for timber resources: Kenya, Morocco, Senegal, Uganda

I. Forest Accounts: Asset accounts for forest land and other wooded land

What are asset accounts for forest and other wooded land?

The **intent of asset accounts** is to record the opening and closing stock of environmental assets and the different types of changes in the stock over an accounting period.

Physical assets accounts for forest and other wooded land are a type of physical asset accounts for land.

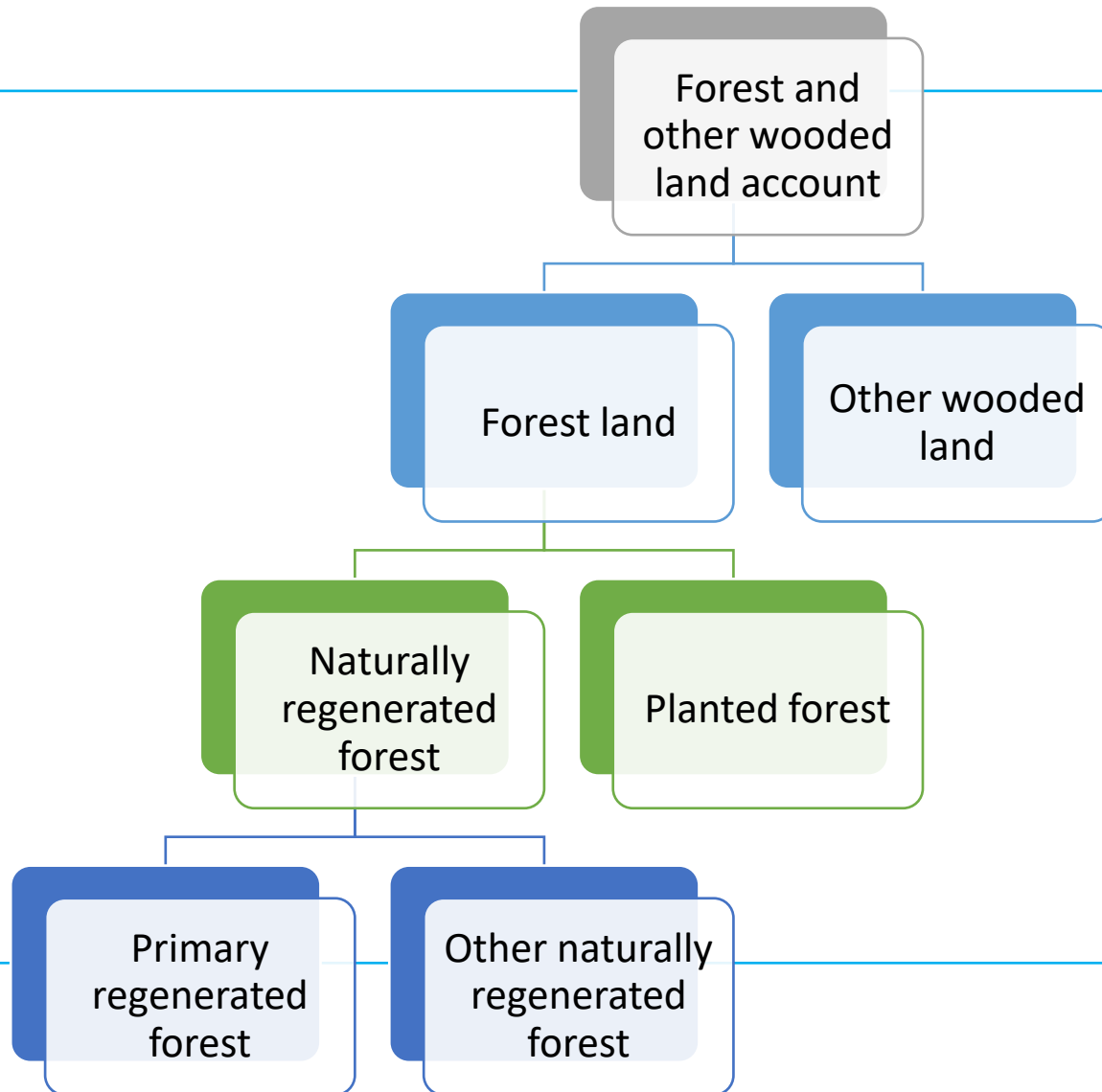
- The focus of the forest and other wooded land account is on changes in the area of land, for example, due to deforestation and afforestation, rather than on the quantity and value of timber removed from areas of forest and other wooded land.

Global Forest Resources Assessments

- The scope of the forest and other wooded land account is defined consistent with the definition of this land in the [FAO Global Forest Resources Assessment \(FRA\)](#).
- FAO has monitored the world's forests at five-to-ten-year intervals since 1946.
- The recent Global Forest Resources Assessments (FRA) are produced every five years to provide a consistent approach to describe the world's forests and how they are changing.



Scope of the forest and other wooded land account



- ✓ Where possible, accounts should be compiled reflecting these distinctions between types of forest and other wooded land.
- ✓ In addition, countries may be interested in compiling accounts based on the total area of different species of tree.

Forest land and other wooded land

Definitions

Forest land is defined as land spanning more than 0.5 hectares with trees higher than 5 metres and a canopy cover of more than 10 per cent, or trees able to reach these thresholds in situ.

Other wooded land is land:

- not classified as forest land, spanning more than 0.5 hectares;
- with trees higher than 5 metres and a canopy cover of 5-10 per cent, or trees able to reach these thresholds in situ;
- or with a combined cover of shrubs, bushes and trees above 10 per cent.

It does not include land that is predominantly under agricultural or urban land use.

Naturally regenerated forest

Definitions

Naturally regenerated forest is forest that is predominantly composed of trees established through natural regeneration.

In this context, “predominantly” means that the trees established through natural regeneration are expected to constitute more than 50 per cent of the growing stock at maturity.

Primary regenerated forest is naturally regenerated forest of native species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.

Other naturally regenerated forest is naturally regenerated forest with clearly visible indications of human activities.

Planted forest

Definition

Planted forests are predominantly composed of trees established through planting and/or deliberate seeding.

- Planted/seeded trees are expected to constitute more than 50 per cent of the growing stock at maturity, including coppice from trees that were originally planted or seeded.

Physical asset account for forest and other wooded land

Hectares

	Type of forest and other wooded land				Total
	Primary forest	Other naturally regenerated forest	Planted forest	Other wooded land	
Opening stock of forest and other wooded land					
Additions to stock					
Afforestation					
Natural expansion					
Reductions in stock					
Deforestation					
Natural regression					
Closing stock of forest and other wooded land					

Changes in the stock

Physical asset account for forest and other wooded land

(+) Additions to the stock	(-) Reductions in the stock
<p>(+) Afforestation represents an increase in the stock of forest and other wooded land either due to the establishment of new forest on land that was previously not classified as forest land, or as a result of silvicultural measures such as planting and seeding.</p>	<p>(-) Deforestation represents a decrease in the stock of forest and other wooded land due to the complete loss of tree cover and transfer of forest land to other uses (e.g., use as agricultural land, land under buildings or roads) or to no identifiable use.</p>
<p>(+) Natural expansion is an increase in area resulting from natural seeding, sprouting, suckering or layering.</p>	<p>(-) Natural regression should be recorded when the stock of forest and other wooded land reduces for natural reasons.</p>

II. Forest Accounts: Asset accounts for timber

What are physical asset accounts for timber resources?

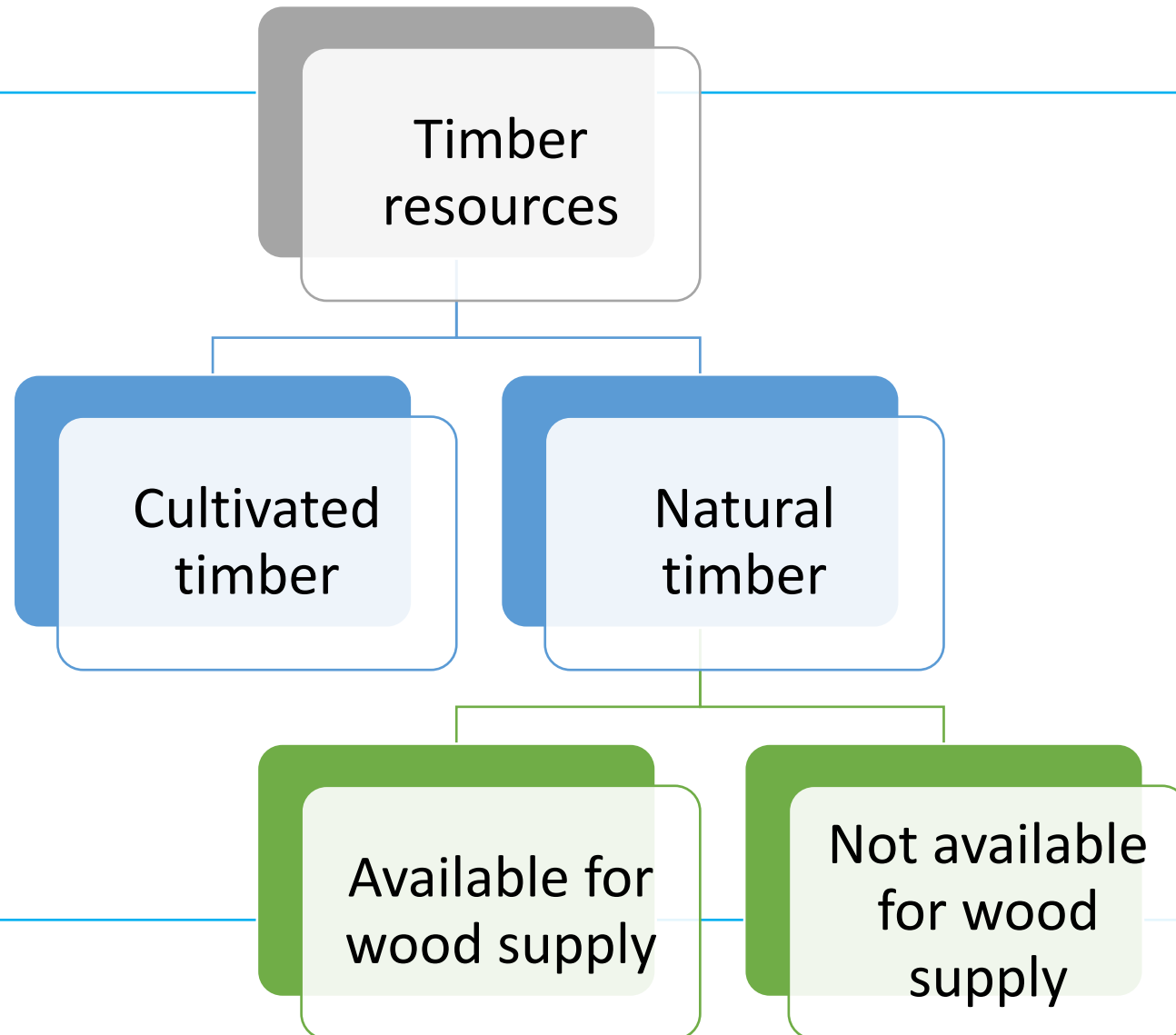
Timber resources are defined by the volume of trees, living or dead, and include all trees regardless of diameter, tops of stems, large branches and dead trees lying on the ground that can still be used for timber or fuel.

**FAO Global Forest Resources Assessment*

The **physical asset account for timber resources** records the volume of timber resources at the beginning and end of an accounting period and the change in this stock over the accounting period.

All estimates of timber resources, including estimates of the monetary value of timber resources, need to take into account country-specific conditions and practices.

Type of timber resource



- While the timber resources that are not available for wood supply do not have an economic value, these timber resources remain in scope of timber resources in the SEEA **in physical terms**, as they fulfil the definition of environmental assets and may provide benefits.
- However, they are not recorded in the asset accounts for timber resources **in monetary terms**.

Cultivated versus Natural timber

The growth in **cultivated timber** resources is considered to be a process under the direct control, responsibility and management of institutional units.

The growth of **natural timber** resources, on the other hand, is not considered to take place within the production boundary and is recorded as entering the production boundary only at the time the tree is removed from the forest or other land area.

In practice, a common initial basis for the determination of whether timber resources are cultivated or natural is the type of land on which the timber resources are found.

Physical asset accounts for timber resources

Thousands of cubic metres over bark

	Type of timber resource		Total
	Cultivated timber resources	Natural timber resources	
		Available for wood supply	
Opening stock of timber resources			
Additions to stock			
Natural growth			
Reclassifications			
Reductions in stock			
Removals			
Felling residues			
Natural losses			
Catastrophic losses			
Reclassifications			
Closing stock of timber resources			

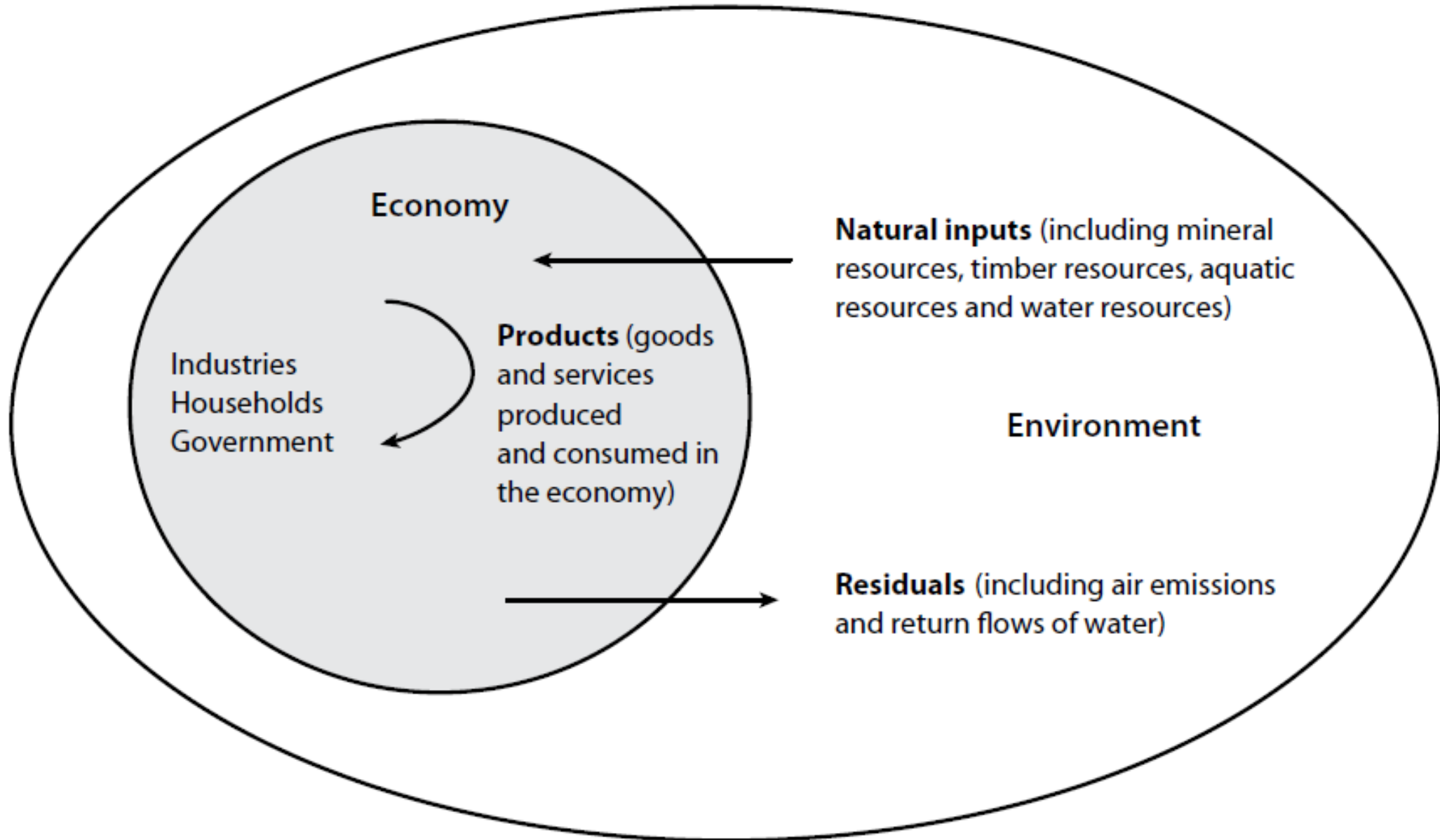
Changes in the stock

Physical asset accounts for timber resources

(+) Additions to the stock	(-) Reductions in the stock
(+) Natural growth is measured in terms of the gross annual increment, i.e., the volume of increment over the reference period of all trees with no minimum diameter.	(-) Removals are estimated as the volume of timber resources removed from forest land, other wooded land and other land areas during the accounting period.
(+) Reclassifications: <ul style="list-style-type: none">Increases in the area of forest land, other wooded land and other areas of land that lead to increases in the volume of available timber resources;A result of changes in management practice that shift timber resources from cultivated to natural or vice versa	(-) Felling residues are associated with the fact that, at the time of felling, a certain volume of timber resources is rotten, damaged or in excess in terms of the size requirements. (-) Natural losses are the losses to the growing stock (i.e., living, standing trees) during an accounting period due to mortality from causes other than felling. (-) Catastrophic losses should be recorded when there are exceptional and significant losses of timber resources due to natural causes.

III. Forest Accounts: Flow accounts for timber

Physical flows of natural inputs, products and residuals



Physical supply and use tables (PSUT)

	<u>Indust- ries</u>	<u>House- holds</u>	<u>Accumu- lation</u>	Rest of the world (Imports / Exports)	<u>Environ- ment</u>	Total
Supply table						
Natural inputs						
Products						
Residuals						
Use table						
Natural inputs						
Products						
Residuals						

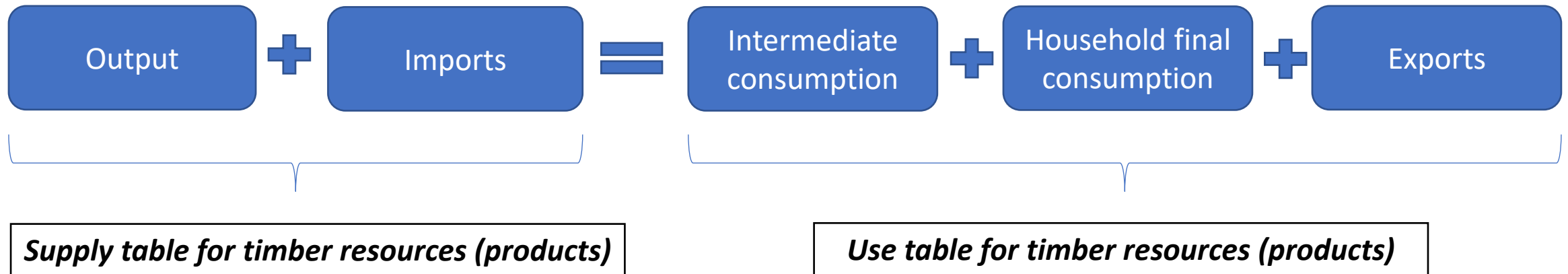
Physical supply and use tables (PSUT)

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Supply table						
Natural inputs						
Products						
Residuals						
Use table						
Natural inputs						
Products						
Residuals						

Supply and use tables for timber resources (products)

General concept

Physical flow accounts for timber resources mainly focus on timber products:



Boundary of the physical flow accounts for timber resources

Physical flow accounts for timber resources mainly focus on timber products

For example:

- Gross fellings
 - Felling residues (not removed)
 - Removals (over bark)
 - Bark
 - Removals (under bark)
- Roundwood (under bark)
 - Industrial roundwood
 - Wood fuel

Physical Supply and use tables for timber resources (products)

Cubic metres

Supply table for timber resources (products)

	Total output	Of which by ISIC		Imports	Total supply
		Logging activity (ISIC 022)	Other industries		
<i>Timber resources (products)</i>					

Use table for timber resources (products)

	Total intermediate consumption	Of which by ISIC		Household final consumption	Exports	Total use
		Logging activity (ISIC 022)	Other industries			
<i>Timber resources (products)</i>						

Conclusion

- **Forest accounts** provide a conceptual framework for organizing environmental and economic information on forest resources in a coherent and consistent manner to inform policy makers on relevant areas.
- **Physical assets accounts for forest and other wooded land** are a type of physical asset accounts for land.
- **Physical asset accounts for timber resources** records the volume of timber resources at the beginning and end of an accounting period and the change in this stock over the accounting period.
- **Flow accounts for timber** describe the flows of timber involved in the national economy.
- Forest accounts **require national-level data** from forest monitoring and management systems, as well as from national-level producers of wood products, trade flows, and households.

Thank you



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