



# MEASURING CLIMATE CHANGE

## THE ECONOMIC AND FINANCIAL DIMENSIONS

## THE SYSTEM OF ENVIRONMENTAL-ECONOMIC ACCOUNTING: APPROACHES FROM COLOMBIA

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Presenter:

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## 1. Introduction

- ▶ General objective – Guiding question
- ▶ Methodology

## 2. Development

- ▶ Colombia's experience with environmental accounting

## 3. Conclusions

- ▶ Challenges
- ▶ Recommendations

# Introduction

## Guiding question

- Beyond the short-term, what should be the core statistical framework of a medium- to long-term strategy for sound and sufficiently detailed data to support policymaking?

## General objective

- Provide inputs from the **National Statistical Office of Colombia** (DANE, for its acronym in Spanish) to evidence why the System of Environmental and Economic Accounting - Central Framework (SEEA- CF) prevails over the other multipurpose statistical frameworks on a medium and longer terms strategy.

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## Methodology

1. Conceptual discussion on how the SEEA-CF is ideal for the production and analysis of indicators of environmental assets, flows and activities, besides associated transactions.
2. Assess the potential use of the SEEA-CF as the basic statistical framework for implementing a medium and long-term strategy to support policymaking in environmental accountings.
3. Present the experience of Colombia with environmental accounting.

# Development

## Why DANE considers that the SEEA- CF prevails over the other multipurpose statistical frameworks on a medium and longer terms strategy?

### COLOMBIA'S EXPERIENCE WITH ENVIRONMENTAL ACCOUNTING

#### Context:

- Country with **several biomes** and one of the few nations in the world that is **megadiverse** that can also **benefit economically from minerals, oil and other goods** (UNEP-WCMC, 2016).

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- It is **highly exposed to climate change-related disasters**, ranking 10th globally in terms of economic risk posed by three or more hazards (The World Bank, 2021).

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- Colombia **recognizes the importance of preserving its biodiversity, while taking advantage of the economic benefits of the environment** and being aware of its exposure to natural hazards.

## Why DANE considers that the SEEA- CF prevails over the other multipurpose statistical frameworks on a medium and longer terms strategy?

### COLOMBIA'S EXPERIENCE WITH ENVIRONMENTAL ACCOUNTING

#### DANE's Environmental Satellite Account (ESA):

- DANE has been developing it as an inter-agency cooperation project, for the technical construction of the **Environmental and Economic Accounts** in Colombia and **following the recommendations of the SNA and the SEEA-CF**.
  - ▶ Inclusion of alternative statistical concepts and classifications
  - ▶ The use of statistical information and non-monetary variables without distorting or overloading the central framework of economic measurement

## DANE annually updates and publishes the following economic-environmental accounts, within the SEEA:

### Assets:

- Environmental and economic asset account of mineral and energy resources (CAE-ARME).
- In physical units, for assets mineral coal (provisional 2005-2020),
- Natural gas (provisional 2005-2020)
- Oil (provisional 2005-2020)
- Iron ore (provisional 2016-2020)
- Copper ore (provisional 2014-2020)
- Nickel ore (provisional 2014-2020).

### Flows:

- Environmental and economic account of forest flows (CAE – FB) in physical and monetary units, for the provisional 2005-2019 series
- Environmental and economic account of water flows (CAE – FA) in physical units, for the provisional 2010-2019 series
- Environmental and economic account of energy flows (CAE – FE) in physical units, for the 2005 - 2019 provisional series
- Environmental and economic account of material flows: solid waste (CAEFM-RS) in physical units, for the provisional 2012-2019 series
- Environmental and economic account of material flows: air emissions (CAEFM-EA) in physical units, for the provisional 2005 - 2019 series

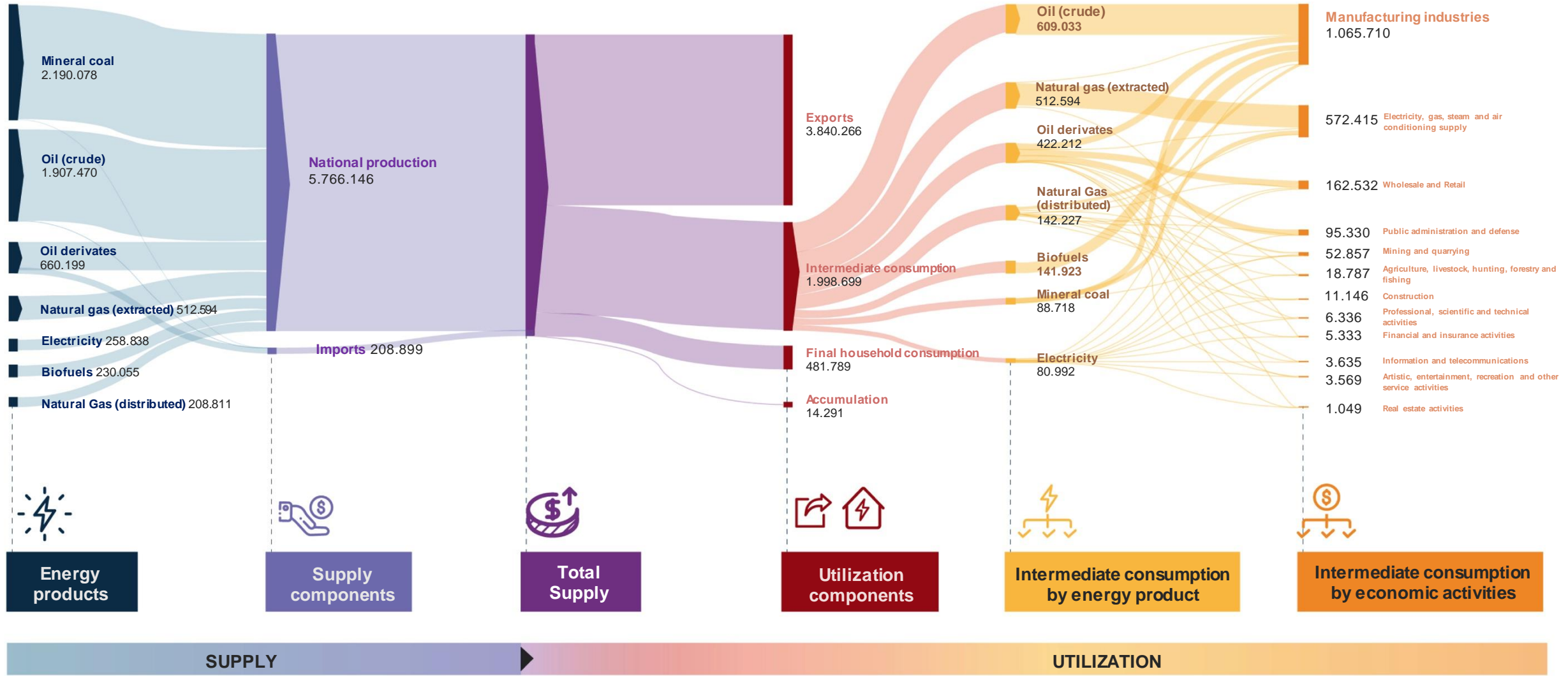
### Environmental activities and associated transactions:

- Environmental account of environmental activities and associated transactions in monetary units, for the provisional 2009-2020 series.



# Flow of energy products

## Terajoules / 2019p



p: provisional

Source: DANE Environmental and economic account of energy flows.

**According to the latest Global Assessment of Environmental-Economic Accounting and Supporting Statistics carried out by UNSD in 2020, Colombia is one of the 62 countries worldwide that does a regular compilation and dissemination of the SEEA by publishing at least one of its accounts at the time of the assessment**

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(United Nations Committee of Experts on Environmental-Economic Accounting, 2021, page 2).

## **In Colombia, the environmental accounts requires the provision of information produced by other stakeholders. One example:**

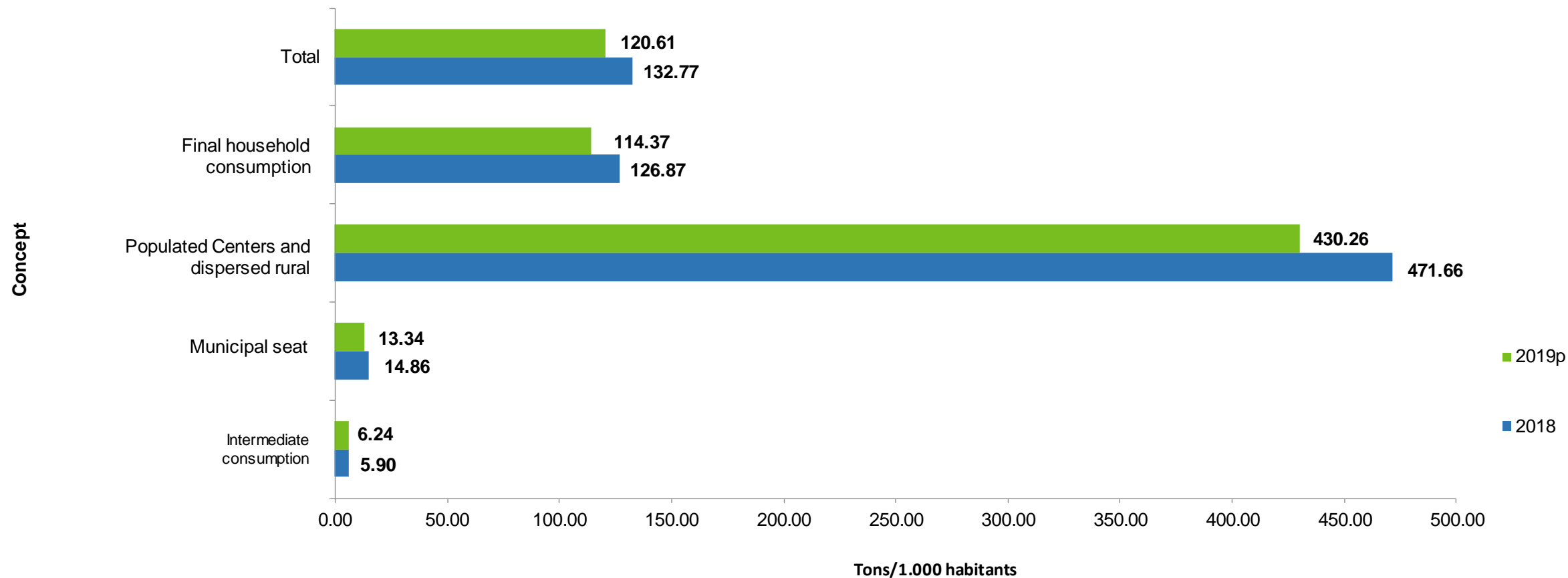
### **Environmental and Economic Account of Forest Flows (CAE-FB):**

- DANE – Public
- National Association of Industrialists of Colombia (ANDI) – Private
- Mining and Energy Planning Unit (UPME) – Public
- Institute of Hydrology, Meteorology and Environmental Studies (IDEAM) - Public\*
- Ministry of Agriculture and Rural Development (MADR) – Public\*

*\*Contrast statistics*

# Per capita consumption of wood

Tons/1.000 habitants  
By concept 2018-2019p



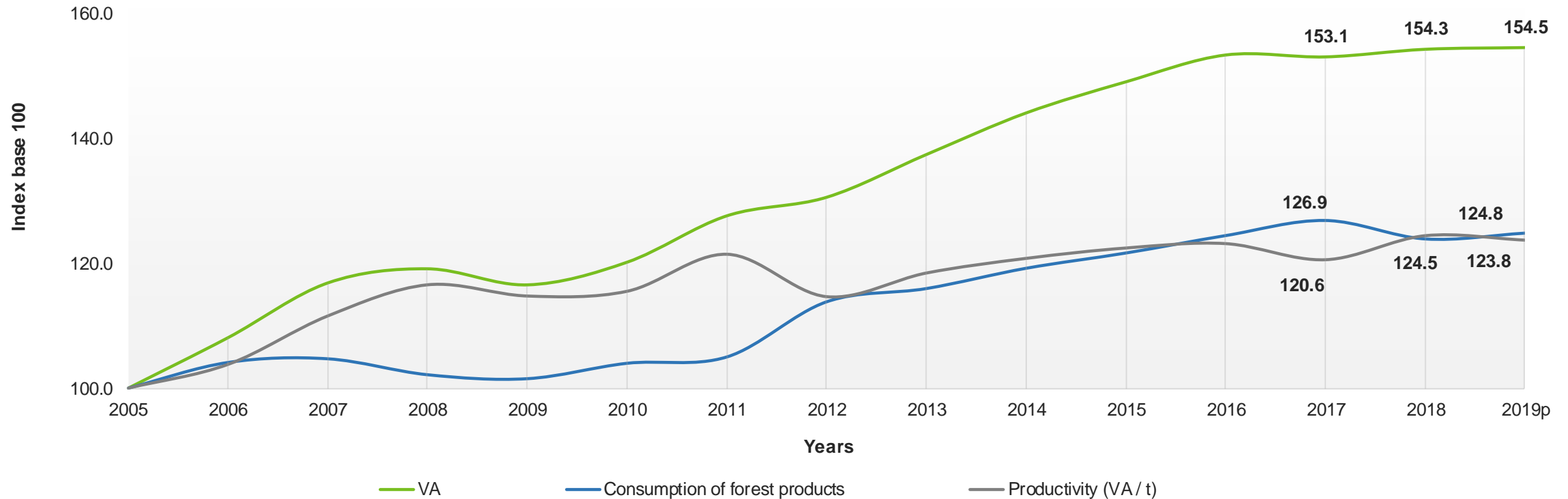
p: provisional

Source: DANE Environmental and Economic Account of Forest Flows (CAE-FB).

# Decoupling of resource usage - Forest Products

Indices based on 100 = 2005

National total 2005 - 2019 p



p: provisional

AV: Aggregated value

Source: DANE Environmental and Economic Account of Forest Flows (CAE-FB).

Note: the intermediate consumption was updated for the series 2005 - 2013.

# Why DANE considers that the SEEA- CF prevails over the other multipurpose statistical frameworks on a medium and longer terms strategy?

## 1. National coordination and development policies:

- It allows a **common language** for public policies, enabling **articulation among multiple stakeholders** under **governance structures**:
  - ▶ CONPES Document No. 3934 of 2018 established the “Green Growth Policy of Colombia”.
    - ▶ Considers the strengthening of administrative records and / or the generation of statistical operations that serve as input in the implementation of the SEEA within the Environmental Satellite Account.

## 2. Supports other processes highly relevant for climate change:

- The National Circular Economy Strategy in charge of the Ministry of Environment and Sustainable Development.
- The Circular Economy Information System led by DANE.

## 3. Positive impact on the dissemination of official data and statistics it to a wide range of actors:

- Reports, presentations, webinars, and inter-sectorial dialogues:
  - ▶ Three reports on Circular Economy indicators between 2020 and 2021.

## Why DANE considers that the SEEA- CF prevails over the other multipurpose statistical frameworks on a medium and longer terms strategy?

### 4. Possibility to report on Colombia's international commitments:

- Colombia became a member-State of the OECD in April 2020.
  - ▶ DANE reports some of Colombia's advancements on its post-accession commitments to the OECD's Environmental Policy Committee (EPOC)
    - ▶ Recommendations on Resource Productivity and on Council on Material Flows and Resource Productivity.
- It is a direct source of information to report on the advancements regarding the Sustainable Development Goals (SDGs).
- Potentiality to respond to new information needs
  - ▶ Global consultation on the draft of the set of statistics and indicators on climate change carried out by UNSD (July 2021).
  - ▶ Post-2020 Global Biodiversity Framework currently being negotiated under the Convention on Biological Diversity (CBD).

# Conclusions



**“For all the arguments presented through this paper, including the conceptual framework as well as the institutional arrangements that are behind the SEEA-CF, it can be argued that it is the core statistical framework of a medium to long-term strategy for sound and sufficiently detailed data to support policymaking. Its opportunities to continue developing this framework would not only benefit national accountings, but also international environmental commitments”.**

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(The System of Environmental-Economic Accounting:  
Approaches from Colombia, 2021)

# Colombia's inputs for challenges and opportunities to continue the development of the SEEA-CF

## CHALLENGES:

- Improve communication between different stakeholders and users of environmental accounts to raise awareness of the need to count with data for policy monitoring and implementation.
  - ▶ There is an important difference between the progress in the implementation of the SEEA and the requirements of public policies and international commitments.
- As a developing country it realizes on the great amount of resources needed to continue developing the environmental accounts and the need to include them as a priority of the international agenda.
  - ▶ Promote additional mobilization of financial and technical resources from international cooperation.

# Colombia's inputs for challenges and opportunities to continue the development of the SEEA-CF

## RECOMMENDATIONS AND OPPORTUNITIES:

- Position environmental data and statistics as a top priority on the international agenda.
- Bring policymakers closer to technical construction exercises.
- Create institutional frameworks that allow a multidisciplinary and multi-stakeholder approaches (such as CONPES 3934/2018).
- Create and improve technical capacities among the different sources of information needed.
- Strengthen communication between the different interest groups and users of environmental accounts to raise awareness about the need to have data for the monitoring and implementation of policies.
- Reduce the backlog of environmental accounting in order to respond with greater opportunity to the requirements of public policies and international commitments.

**Thank you**

# Annexes

# Acknowledgements:



STATISTICS

**DANE**  
INFORMACIÓN PARA TODOS

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## An increasingly important growth of Environmental issues through Global Governance

- Increase of environmental issues importance in the international agenda since the late 1980s
  - ▶ Multilateral Environmental Agreements and specific agreements for each of the specific categories of the broad spectrum of the environmental international regime.
    - ◆ Montreal Protocol (1987)
    - ◆ United Nations Framework Convention on Climate Change (1992)
    - ◆ Tokyo Protocol (1997)
    - ◆ Paris Agreement (2015)
    - ◆ **The 2030 Agenda for Sustainable Development (2015)**



- States-parties of these agreements are subject to obligations and commitments.
- **Production of timely, quality, open, and disaggregated data and statistics are essential to formulate, implement and evaluate public policy, that will accelerate these goal's fulfillment.**

## Multipurpose Statistical Frameworks for environmental statistics

- They contribute to the compilation, collection, development, implementation of environmental statistics and their **integration with economic and financial statistics**
  - They are **compatible with each other**, share concepts, definitions, classifications and accounting standards, when applicable, with the System of National Accounts (SNA)
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- Some of them include:
    - ▶ **System of Environmental and Economic Accounting - Central Framework (SEEA- CF)**
    - ▶ System of Environmental and Economic Accounting - Ecosystem Accounts (SEEA - EA)
    - ▶ Framework for the Development of Environmental Statistics (FDES).



# Differences between multipurpose statistical frameworks

## System of Environmental-Economic Accounting (SEEA) - UNSC, 2012

- Provide a common framework for organizing and presenting statistics on the environment and its relationship with the economy
- Two main divisions
  - **Central Framework (SEEA-CF)**
    - ◆ “Takes the viewpoint of the economy and examines how natural resources (...) are used in production and consumption, along with resulting pollution in the form of waste, water and air emissions” (United Nations; European Union, 2020).
  - **Ecosystems Accounting (SEEA-EA)**
    - ◆ “Complements the (SEEA-CF) by taking the perspective of ecosystems and their contribution to human well-being in the form of identifiable ecosystem services” (United Nations; European Union, 2020).



## Framework for the Development of Environmental Statistics (FDES) - UNSC, 2013

- Flexible, multipurpose conceptual and statistical framework.
- Provides an organizing structure to guide the collection and compilation of environment statistics at the national level.
- Covers the issues and aspects of the environment that are relevant for policy analysis and decision-making at early stages in the development of their environment statistics programmes (Department of Economic and Social Affairs - Statistics Division, 2017).

## Why the SEEA- CF prevails over the other multipurpose statistical frameworks on a medium and longer terms strategy?

- **THE CONCEPTUAL FRAMEWORK**

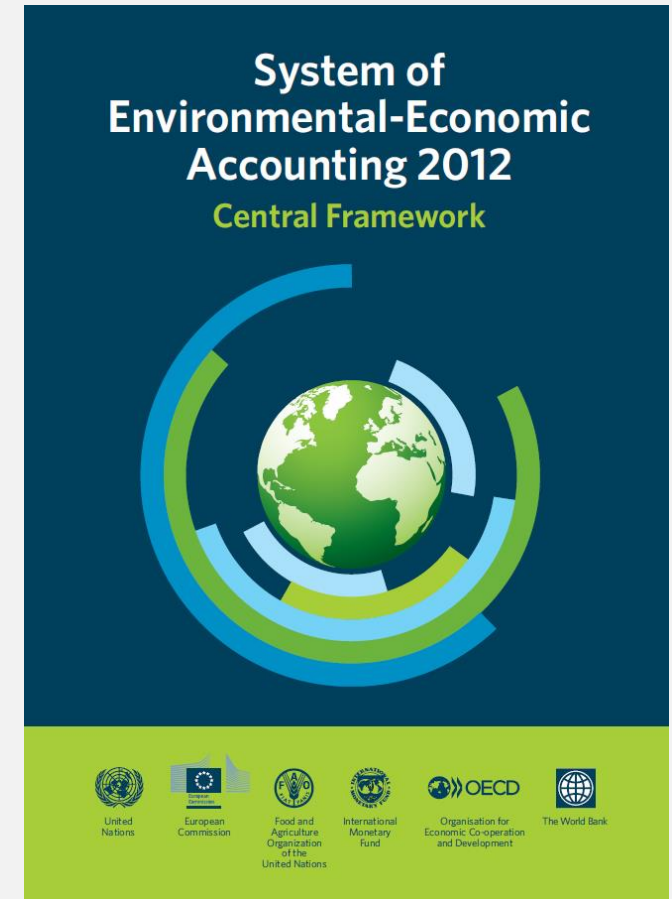
- Rigor of the National Accounts System (SNA), but goes beyond by **reconciling environmental and economic terms**, registering it with better clarity compared to other frameworks.
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- **Compatible with other international standards**, such as the Balance of Payments and International Investment Position, the ISIC, the CPC and the Framework for the Development of Environment Statistics (United Nations; European Union; Food and Agriculture Organization of the United Nations; International Monetary Fund; Organisation for Economic Co-operation and Development; The World Bank, 2014, p. 9)
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- Considers information regarding water, minerals, energy, timber, fish, soil, land and ecosystems, pollution and waste, production, consumption and accumulation, **understood in a broader multidimensional sense, as it is not just about natural stocks.**

## Why the SEEA- CF prevails over the other multipurpose statistical frameworks on a medium and longer terms strategy?

- **THE CONCEPTUAL FRAMEWORK**
  - Two main arguments to support it conceptually as the best strategy to promote global efforts to mitigate climate change effects.
    - ▶ **Allows the production of indicators of environmental assets, flows, activities and associated transactions that allow to comply with international standards and the global agenda.**
    - ▶ **The possibility to analyze environmental indicators through their relationship with the economy.**



*Source: United Nations; European Union; Food and Agriculture Organization of the United Nations; International Monetary Fund; Organisation for Economic Co-operation and Development; The World Bank. (2014). System of Environmental Economic Accounting 2012 - Central Framework.*

**“The coherent integration of environmental and economic statistics facilitates the concurrence of dialogue between decision-makers and formulators of different policy lines, promoting effective and integrated management in favor of the achievement of climate change measurement needs. This also allows countries that implement the SEEA - CF, to establish depletion patterns and levels of use (extraction); and characterizing the pressure that economic activities exert on natural resources, allowing to obtain solid and sufficiently detailed data to support the formulation and monitoring of public policies”.**

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(The System of Environmental-Economic Accounting: Approaches from Colombia, 2021)

## Why the SEEA- CF prevails over the other multipurpose statistical frameworks on a medium and longer terms strategy?

- **THE INSTITUTIONALITY OF THE SEEA-CF**
  - Created within the United Nations (UN) System which translates into a **broader international consensus** and participation of actors of different nature and **backed by important International Organizations** (United Nations; European Union, 2020).  

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  - Has, **by itself, an institutional framework** that monitors and supports its development.
    - The United Nations Committee of Experts on Environmental-Economic Accounting (UNCEEA)
    - The London Group on Environmental Accounting

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  - Has **instruments to support its implementation worldwide**:
    - Seminar on SEEA Implementation
    - Global Assessment of Environmental-Economic Accounting and Supporting Statistics

**The number of countries that are implementing the SEEA have increased from 54 in 2014 to 89 in 2020, meaning an increase of 64% in 6 years, while 27 additional countries revealed having the intention to start compiling the accounts.**

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(United Nations Committee of Experts on Environmental-Economic Accounting, 2021, page 2)

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