BADAN PUSAT STATISTIK

System of Environmental Economic Accounting

#MakeNatureCount

SISNERLING: Land Account

Presented in the Environmental-economic Accounting In Support Of Evidence-based Policies For Land Use And ManagementWebinar

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OUTLINE

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01

INTRODUCTION

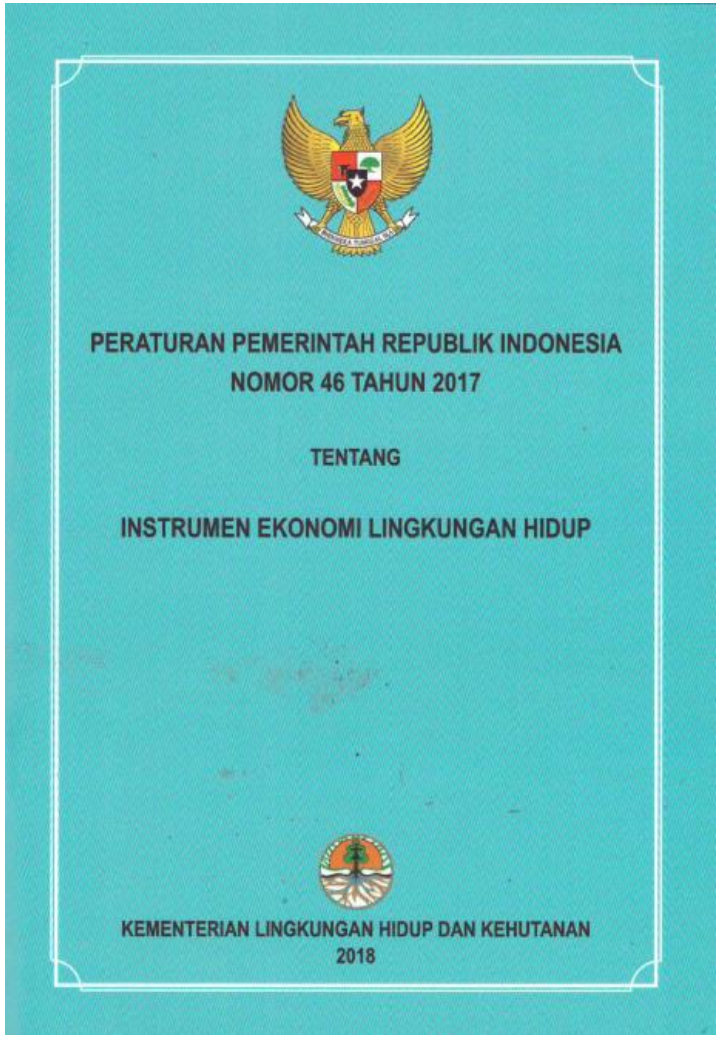
LINKING SEEA TO NATIONAL DEVELOPMENT AGENDA

7 National Development Agenda in RPJMN 2020-2024

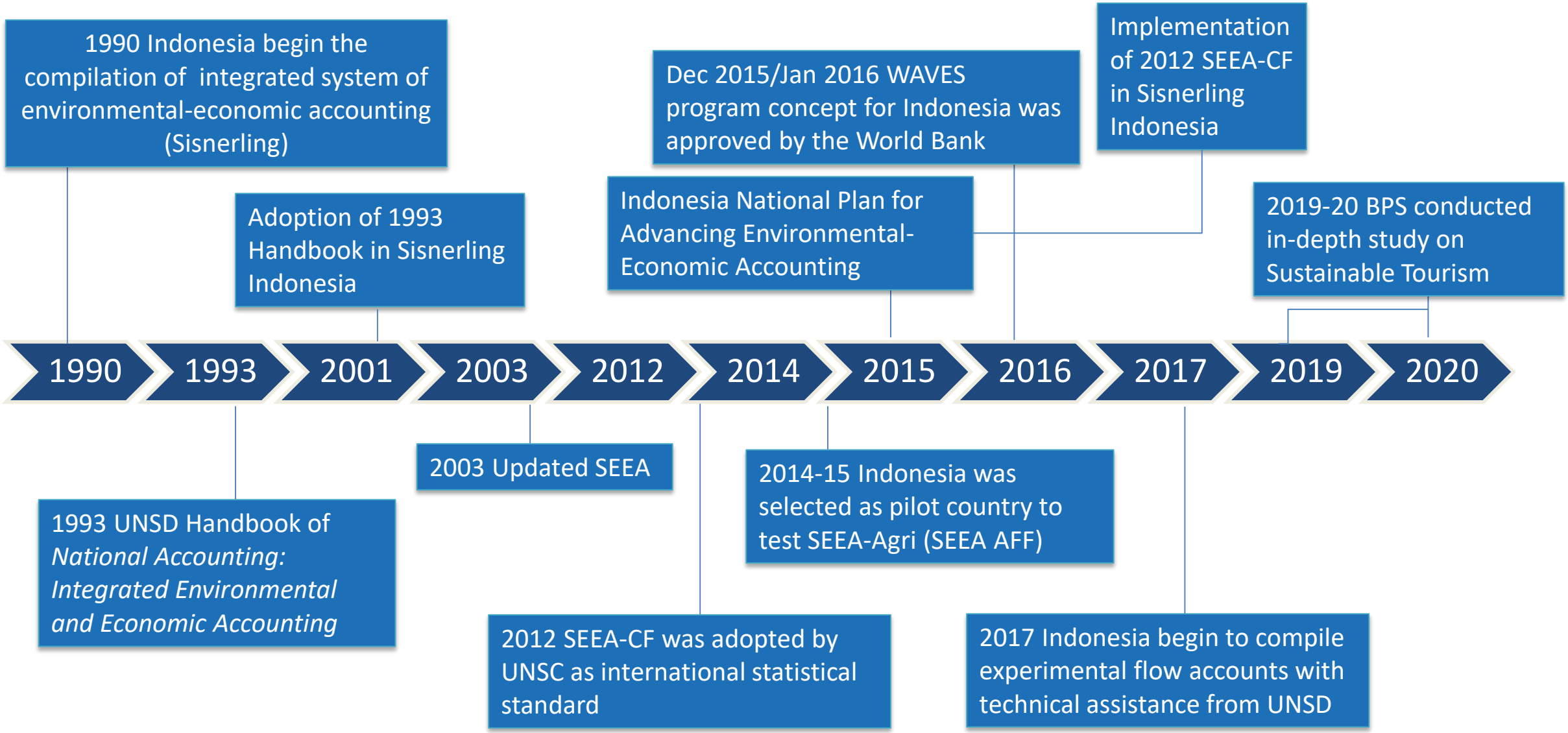
National development needs to pay attention to the carrying capacity of natural resources and the carrying capacity of the environment, disaster vulnerability and climate change.

LEGAL BASIS

- Republic Indonesia Law No 16/ 1997 on Statistics
- Regulation of BPS-Chief of Statistician No 7/ 2008 on the Organisation and Structure of BPS-Statistics Indonesia
- Regulation of BPS-Chief of Statistician No 1 /2009 on Job Description of the BPS-Statistics Indonesia
- **Republic of Indonesia Government Regulation No 46/ 2017 on the Environmental Economics Instruments**



THE STORY OF SEEA IN INDONESIA



SISNERLING INDONESIA

SISNERLING – Sistem Terintegrasi Neraca Ekonomi dan Lingkungan is one of BPS publications aimed to describe the impacts of economic development on the availability of natural resources and the roles of natural resources in economic activities.

New Release!

DOWNLOAD THE LATEST SISNERLING PUBLICATION ON BPS WEBSITE (www.bps.go.id)

02

PLAN AND ROADMAP

PHASE OF SEEA IMPLEMENTATION

PHASE 1:

- Ownership and institutionalization
- Policy Issues
- Prioritized account
- Current initiatives

PHASE 2:

- Data availability
- Data gap analysis
- Capacity Building
- Socialization

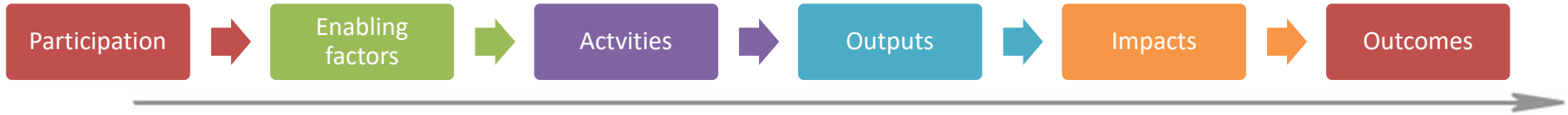
PHASE 3:

- Drafting strategic plan to compile environmental account

PHASE 4:

- Implementation

INDONESIA NATIONAL PLAN TO IMPLEMENT SEEA



Participation

Core members:
Ministry of Planning (BAPPENAS)

Statistics Indonesia (BPS)

Ministry of Finance (MenKeu)

Ministry of Environment (KLH)

(Not yet engaged:)
- Ministry of Agriculture
- Ministry of Forestry
- LAPAN, BPPT, BIG, BKPRN
- Ministry of Marine Affairs and Fisheries
- Others: Bureau of Logistics, Ministry of Foreign Affairs (DepLu)
- Universities
- NGOs
- Civil society

Enabling factors

SEEA Steering Committee
- Governance structure
- Technical working groups

Training and apacity development

Access to data

Funding

Coordination with related national and international activities

Funding proposals

Implementation plan

Access to external expertise

A common geospatial infrastructure and other statistical infrastructure

Statistical standards

Activities

Building priotity ecosystem accounts:
- Data inventory
- Data exchange
- Data quality assessments
- Data development (integration)
- Application of common concepts, classifications and standards
- Transformation of data into accounting structure
- Research on ecosystem services and well-being

Capacity building: Human resources
- Training and capacity buiiding (workshops and courses)
- Awareness-building, communications and outreach

Capacity building: Infrastructure
- Development of common spatial infrastructure
- Determination of common statistical standards

Statistical management
- Project planning and evaluation

Outputs

Land accounts (including, forest, agriculture and ownership)

Water asset, supply and use accounts

Carbon stock, supply and use accounts

Ecosystem service accounts (flood protection)

Economic aggregates: Adjusted Net Savings

Optional:
- Ecosystem condition accounts
- Biodiversity accounts
- Other ecosystem service accounts
- Case studies on ecosystem services and well-being

- Publications on accounts and derived indidators
- A comprehensive shared national set of environmental-economic accounting information
- Publicly-available environmental-economic data

Impacts

Mainstreaming of environmental-economic accounts into planning and decision making

- providing ministers and their agencies with empirical evidence of changes resulting from sustainable development policies

- Integrated indicators on sustainable development

- a civil service and civil society that is informed about environment and developement

- improved knowledge on ecosystems and well-being

- improved statistical collaboration between sectors and agencies

- better policies, decisions on trade-offs between development and conservation

Outcomes

A comprehensive set of environmental-economic accounting information

Enhanced institutional coordination within Indonesia

Improved data infrastructure

Increased awareness and technical capacity

Enhanced coordination of support from international and donor agencies

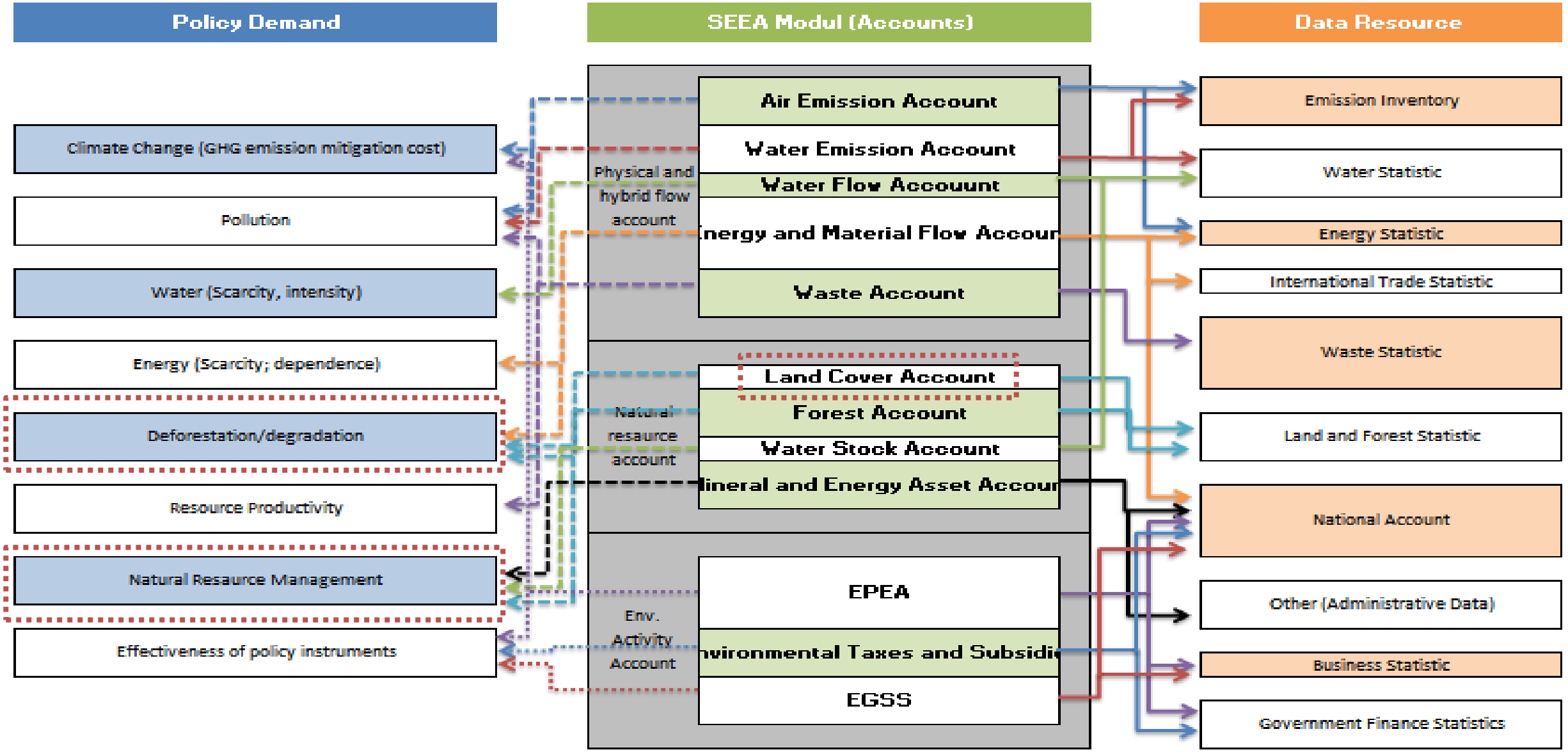
Stronger links with existing platforms for sustainable development and green economy

A more integrated, effective and sustainable National Statistical System

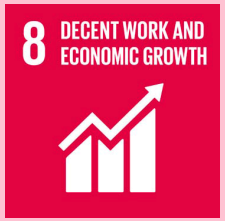
Land Account Indonesia: Building On Existing Initiatives

The One Map program	It is essential for the NP-AEEA project, because it will lead to an accurate map of land cover as a basis for ecosystem accounting.
The Indonesian REDD+ program	It is relevant for the NP-AEEA project, because it will lead to up-to-date information on forest cover and status and carbon stocks. At the same time, the NP-AEEA project could inform the REDD+ program on co-benefits of REDD+ projects. This is a main issue in the design of REDD+ projects, since it would enhance the economic justification of these projects.
Gazetting Forest Lands	NP-AEEA project can benefit from this program by obtaining information on forest lands and forest uses. It can also contribute coherent land data to support the development of land reform.
The Green Economy Program	This program highlights the need for the NP-AEEA as a tool for policy makers to monitor progress to green development and as a source of data on land use
Other Programs	Etc.

LINKING POLICY DEMAND AND ACCOUNTS



BUILDING PARTNERSHIP AMONG MULTI-STAKEHOLDERS



GOAL 8

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

President's Vision

National Development Goals

Kementerian PPN/ Bappenas

Sectoral Plan and Strategies

- Water
- Energy
- Agriculture
- Marine & Fisheries
- Climate Change
- Education
- Tourism
- Forestry
- Disaster Mitigation
- Rural Development
- Health
- Biodiversity

Other Ministries

- **Monitoring and Evaluation**
- **Integrated Approach**

MAIN ISSUES AND CHALLENGES

Commitment from ministries that environmental-economic accounts is important for policy-making

Development of environmental-economic accounts is comply with international standard in support of SDGs

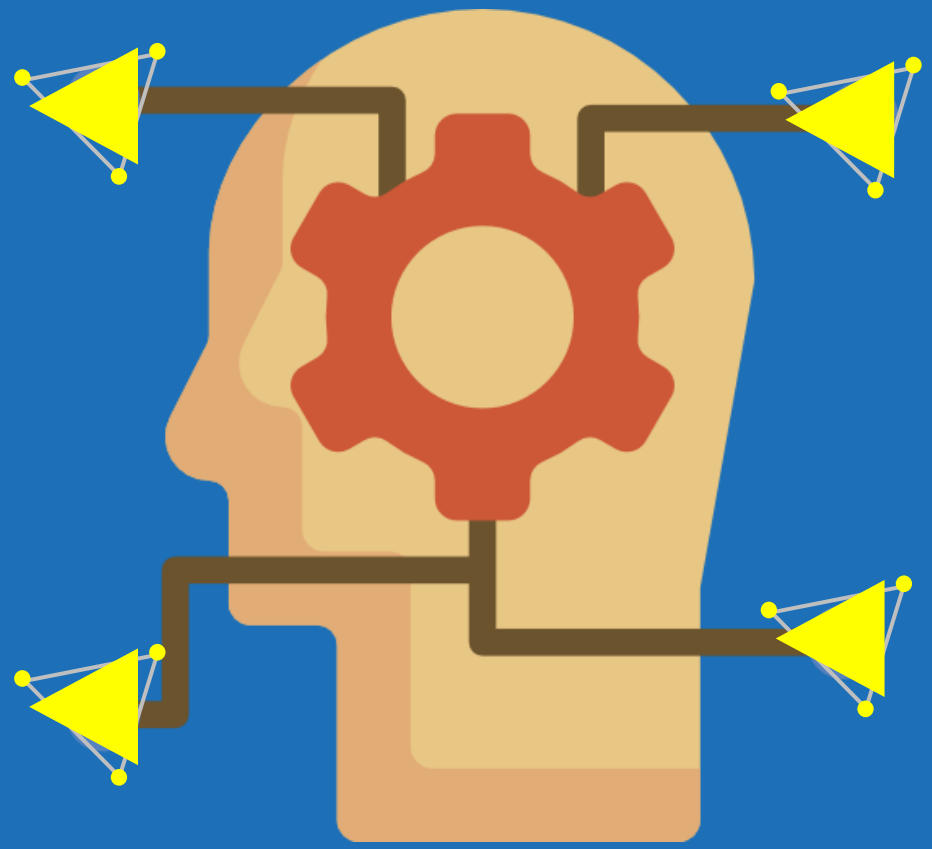
Active collaboration

The need of environmental-economic accounts for policy

LESSON LEARNED

Build partnership with key stakeholders to gain access to sectoral data (tabular and spatial)

Intensify the socialization of the results obtained with policy makers



Need to make operational manual for each account compiled (draft manual)

Use various international initiatives to help SEEA implementation and improvement of Sisnerling

COMMUNICATING AND BUILDING AWARENESS WITH RELEVANT STAKEHOLDERS

A comprehensive environmental-economic accounting information system.	• Address national policy priorities on sustainable development and green economy.
Enhanced institutional coordination within Indonesia and between levels of government and initiatives.	• high-level steering committee as an umbrella coordinating mechanism for SEEA, WAVES and SEEA-Agri
Training and capacity building in environmental-economic accounting.	• provide not only basic understanding of the concepts, but also to engage specialists in professional development through joint activities, staff exchanges and in-depth training on compilation, analysis and valuation.
Enhanced coordination with international and donor agencies.	• could be better coordinated through the SEEA Steering Committee in close collaboration with OneMap and OneData
Addressing challenges of resourcing, data quality, access, technical capacity and statistical infrastructure.	• allocating staff time to pilot projects, data acquisition, data sharing, IT infrastructure development (e.g., data warehouses, collaborative spatial platforms), case studies and research
The development of key aggregate macro-economic statistics.	• collaboration among data providers to obtain the necessary data to produce reliable estimates
Immediately beginning work on priority accounts.	• Land, forest, water, carbon and selected services (especially flood control and carbon storage)

03

DATA SOURCE AND RESULTS OF SISNERLING 2015-2019

Land Accounts in Indonesia

Environmental Assets in SEEA

- Mineral & Energy
  - Oil
  - Natural gas
  - Coal
  - Non-metallic minerals
  - Metallic minerals — bauxite, tin, gold, silver, nickel ore
- Land
- Soil
- Timber
  - Cultivated timber
  - Natural timber
- Aquatic
  - Cultivated aquatic
  - Natural aquatic
- Biological
- Water
  - Surface water
  - Ground water
  - Soil water

2016: Land Account of Sumatera (LC & LU physical asset accounts)

2017: Land Account for Indonesia (LC physical asset account)

DATA SOURCES
SISNERLING INDONESIA

Environmental-Economic Accounts in Sisnerling

- Land Accounts
- Timber Asset Accounts
- Mineral and Energy Asset Accounts

- *Perum Perhutani*
- *Ministry of Environment and Forestry*
- *Ministry of Finance*
- *Ministry of Energy and Mineral Resources*

Land Accounts in Indonesia

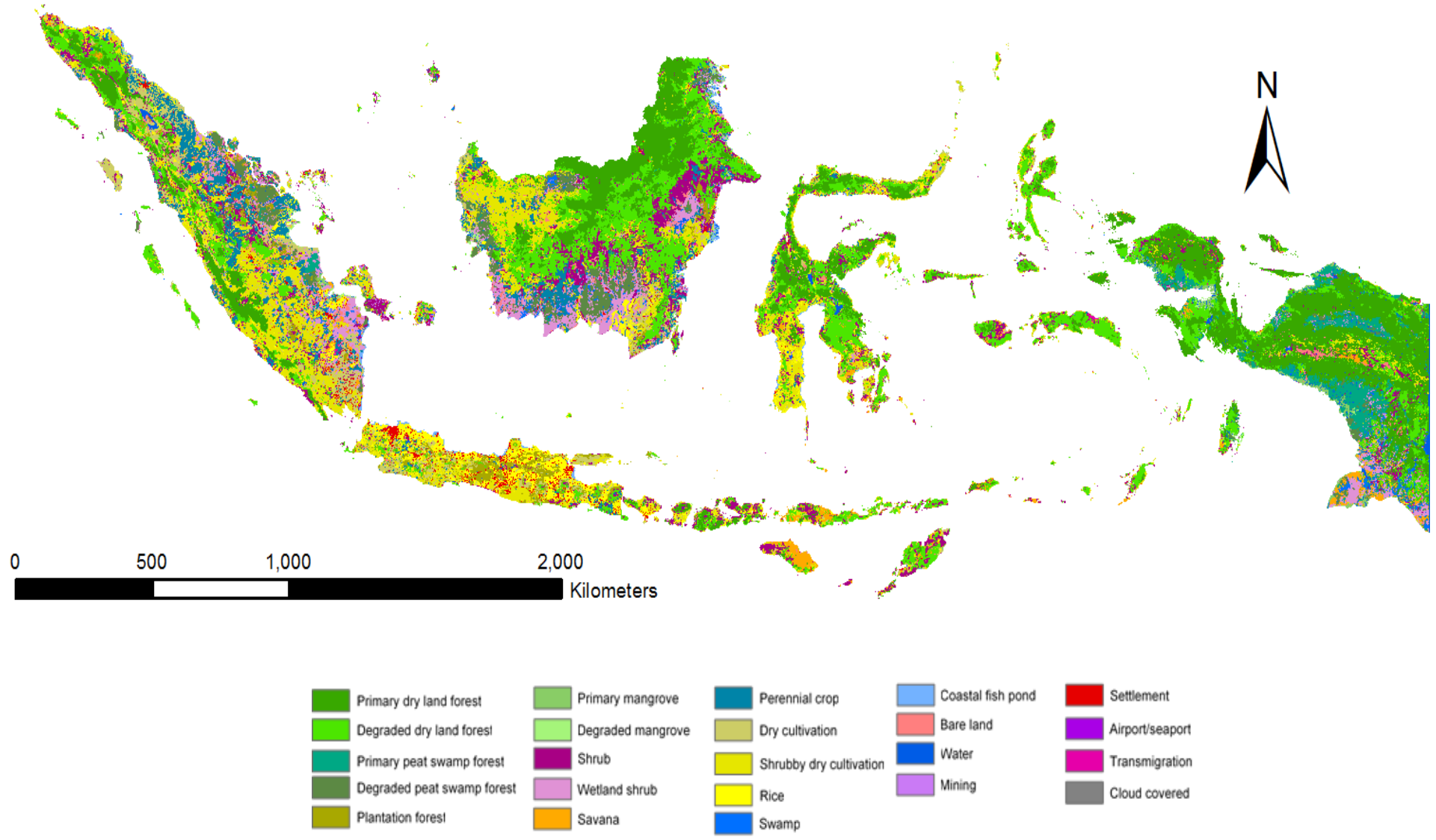
Data Source	Data Type	Limitations
Ministry of Environment and Forestry	• Land Cover data	• Land cover and land use account of Sumatra, only available in physical units (2016)
Geospatial Information Agency & National Land Agency	• Land Use data (BIG only provide land use of Sumatera 2009 and 2012) • Land value (not accessible from BPN)	

Land Accounts in Indonesia

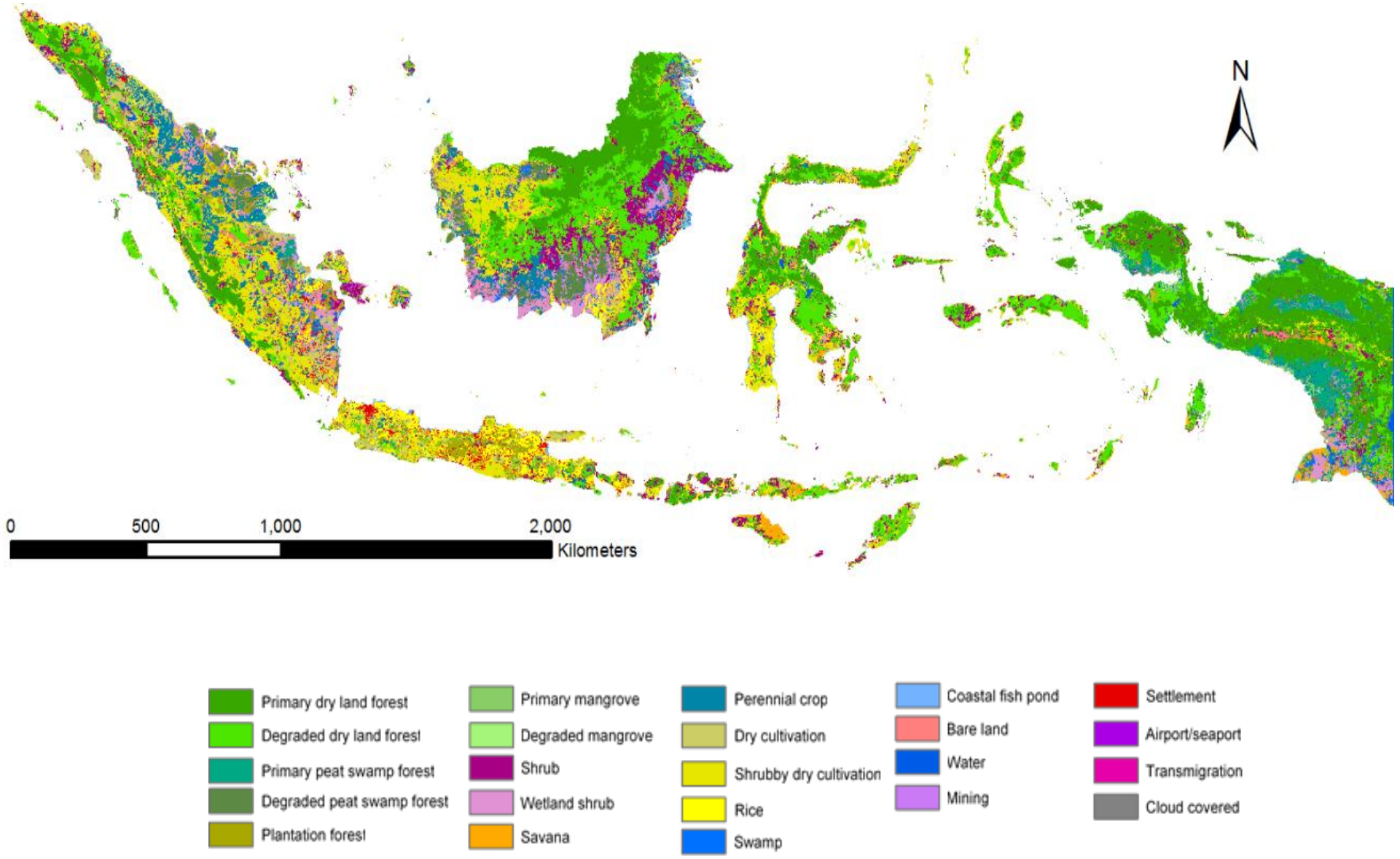
Step to compile land account in Indonesia :

Spatial Data Collected from Ministry of Environment and Forestry (KLHK)	→	**shp file** **23 land cover classes**
GIS Data Processed by in BPS (Statistical Geospatial Unit)	→	**dbf file**
Tabular Data in dbf format processed by Directorate Production Accounts (BPS)	→	**compile land account**

Indonesia Land Cover Map, 2009



Indonesia Land Cover Map, 2014



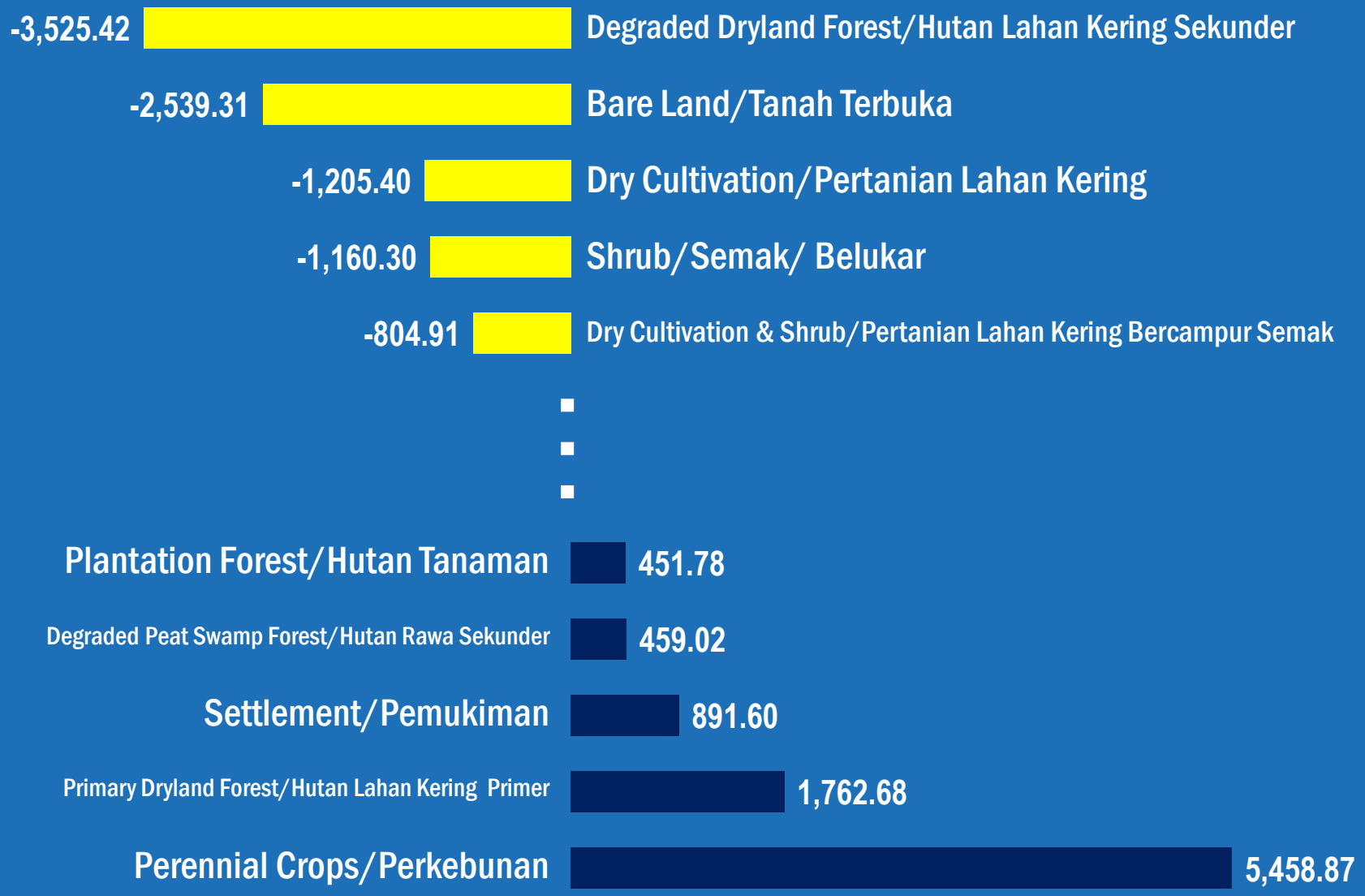
Classification

Indonesia Land Cover Classification (KLHK)

Land cover classification

No.	Kode Klasifikasi	Istilah Bahasa Indonesia	Istilah Bahasa Inggris
(1)	(2)	(3)	(4)
1	2001	Hutan Lahan Kering Primer	*Primary dryland forest*
2	2002	Hutan Lahan Kering Sekunder	*Degraded dryland forest*
3	2004	Hutan Mangrove Primer	*Primary mangrove*
4	2005	Hutan Rawa Primer	*Primary peat swamp forest*
5	2006	Hutan Tanaman	*Plantation forest*
6	2007	Semak/ Belukar	*Shrub*
7	2010	Perkebunan	*Perennial crops*
8	2012	Pemukiman	*Settlement*
9	2014	Tanah Terbuka	*Bare land*
10	3000	Savana/ Padang Rumput	*Savana*
11	5001	Danau	*Water*
12	20041	Hutan Mangrove Sekunder	*Degraded mangrove*
13	20051	Hutan Rawa Sekunder	*Degraded peat swamp forest*
14	20071	Belukar Rawa	*Wetland shrub*
15	20091	Pertanian Lahan Kering	*Dry cultivation*
16	20092	Pertanian Lahan Kering Bercampur Semak	*Dry cultivation & shrub*
17	20093	Sawah	*Rice*
18	20094	Tambak	*Coastal fish pond*
19	20121	Bandara/ Pelabuhan	*Airport/seaport*
20	20122	Transmigrasi/ Kampung	*Transmigration*
21	20141	Pertambangan	*Mining*
22	50011	Rawa	*Swamp*

LAND ACCOUNTS



CHANGES OF INDONESIA LAND COVER 2015-2019 (THOUSAND HECTARES)

In the 2015-2019 period, some land cover classes had their area decreased. Those classes were ***degraded dryland forest, bare land, dry cultivation, shrub, and dry cultivation & shrub****.*

In contrast, the land cover classes whose area increased in the 2015-2019 period were ***perennial crops, primary dryland forest, settlement, degraded peat swamp forest, and plantation forest.***

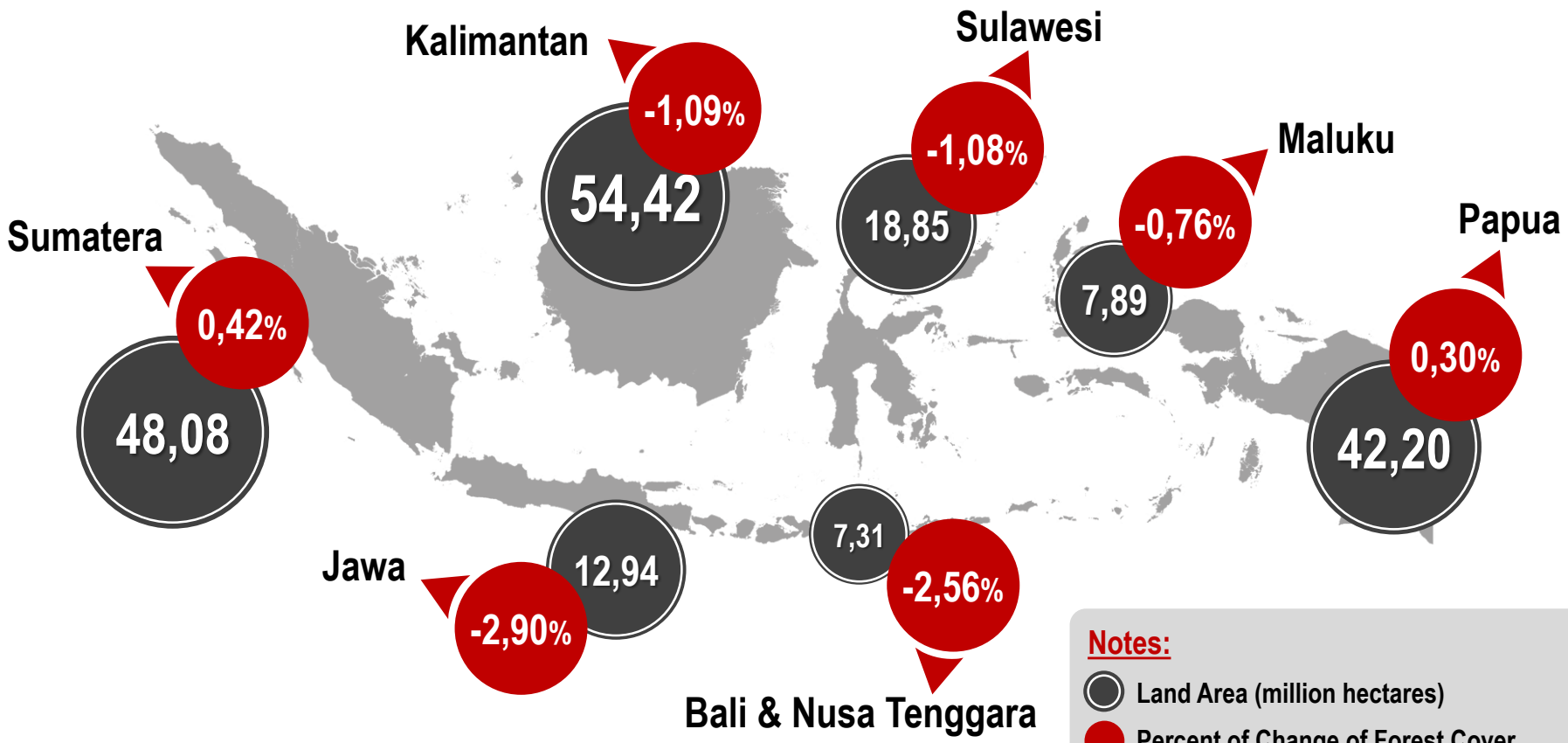
LAND ACCOUNTS

For monitoring the targets of Goal 15 SDGs

Global Indicator : Forest area as a proportion of total land area (15.1.1)

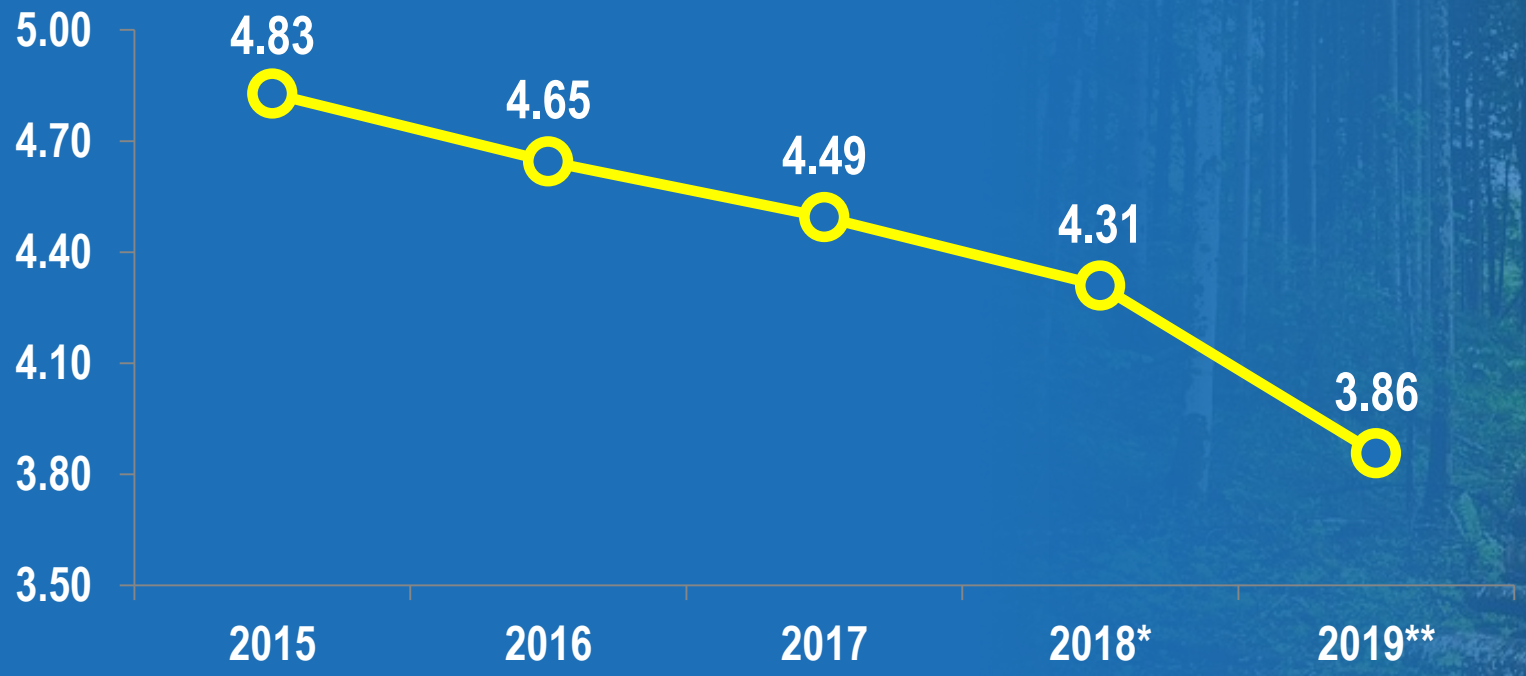
In order to describe forest area as a proportion of total land area, this indicator is approximated by national indicator, i.e. proportion of forest cover to total land area

Island	Percentage of Forest Cover to Land Area (%)	
	2015	2019
Sumatera	27,64	28,06
Jawa	25,18	22,28
Kalimantan	49,90	48,81
Sulawesi	49,57	48,49
Bali-Nusa Tenggara	39,98	37,42
Maluku	64,83	64,07
Papua	80,60	80,90
INDONESIA	**49,61**	**49,04**



TIMBER ASSET ACCOUNTS

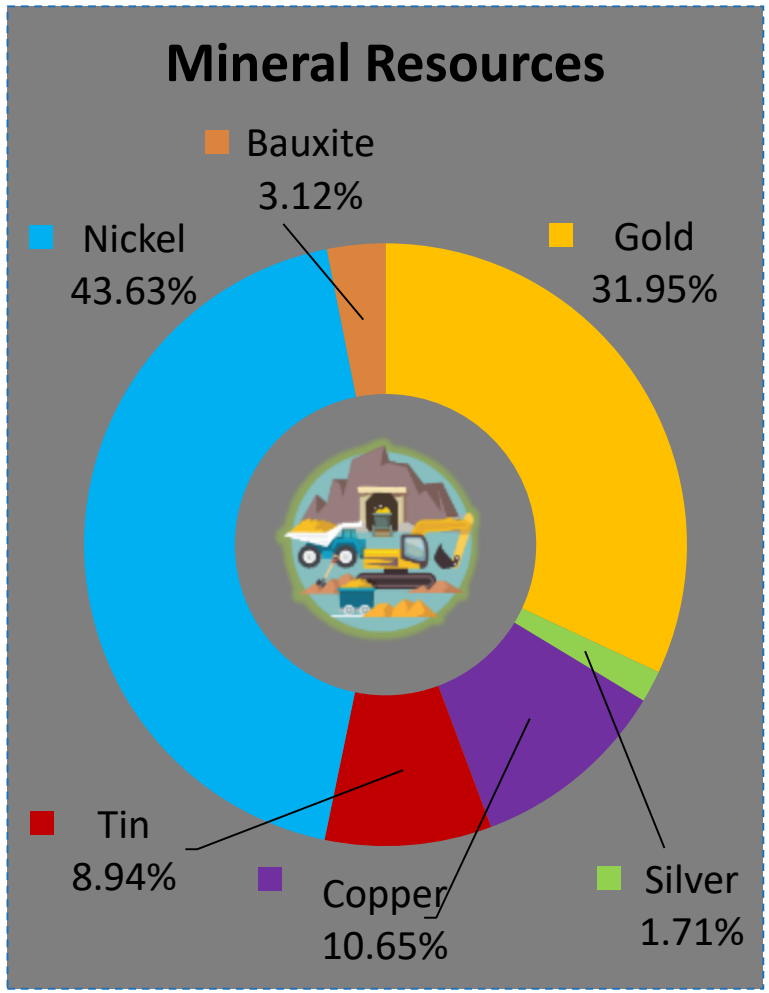
Stock of Timber Resources in Indonesia (billion m^3), 2015-2019

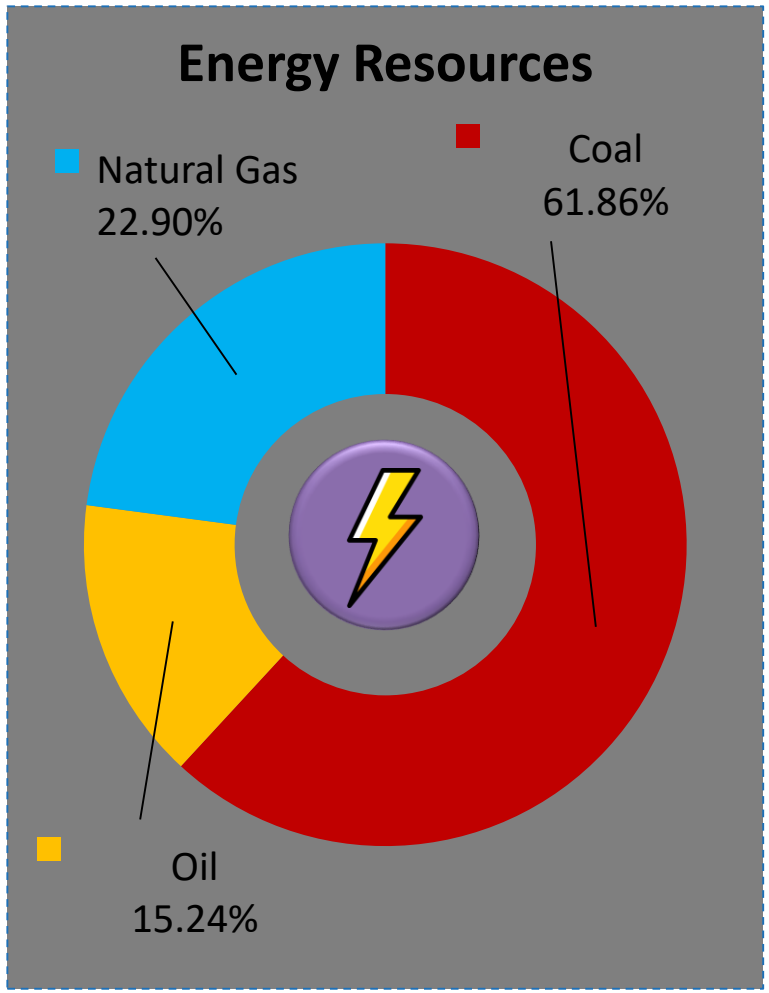


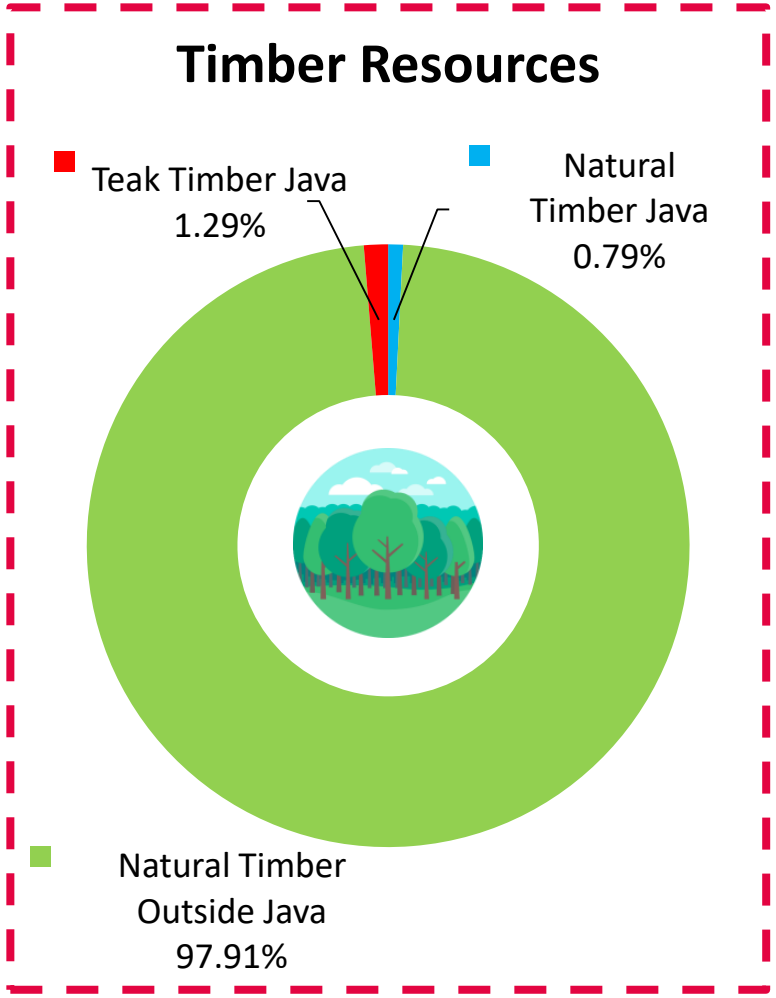
*) preliminary figures
**) very preliminary figures

MONETARY ASSET ACCOUNTS

Percentage of Monetary Value of Indonesia Natural Resources in 2019







MONETARY ASSET ACCOUNTS

Monetary Value of Stock of Natural Resources in Indonesia

Type of Natural Resources	Monetary Value (trillion IDR)	
	2015	2019
Coal	2.534,79	5.292,64
Natural Gas	2.092,74	1.959,50
Oil	1.128,62	1.303,82
Timber	792,99	990,75
Nickel	151,55	688,83
Gold	311,02	504,34
Copper	172,75	168,08
Tin	50,12	141,19
Bauxite	2,51	49,33
Silver	14,78	26,94
TOTAL	**7.251,87**	**11.125,42**

ENVIRONMENTALY ADJUSTED GDP (GDP ADJ BY DEPLETION)

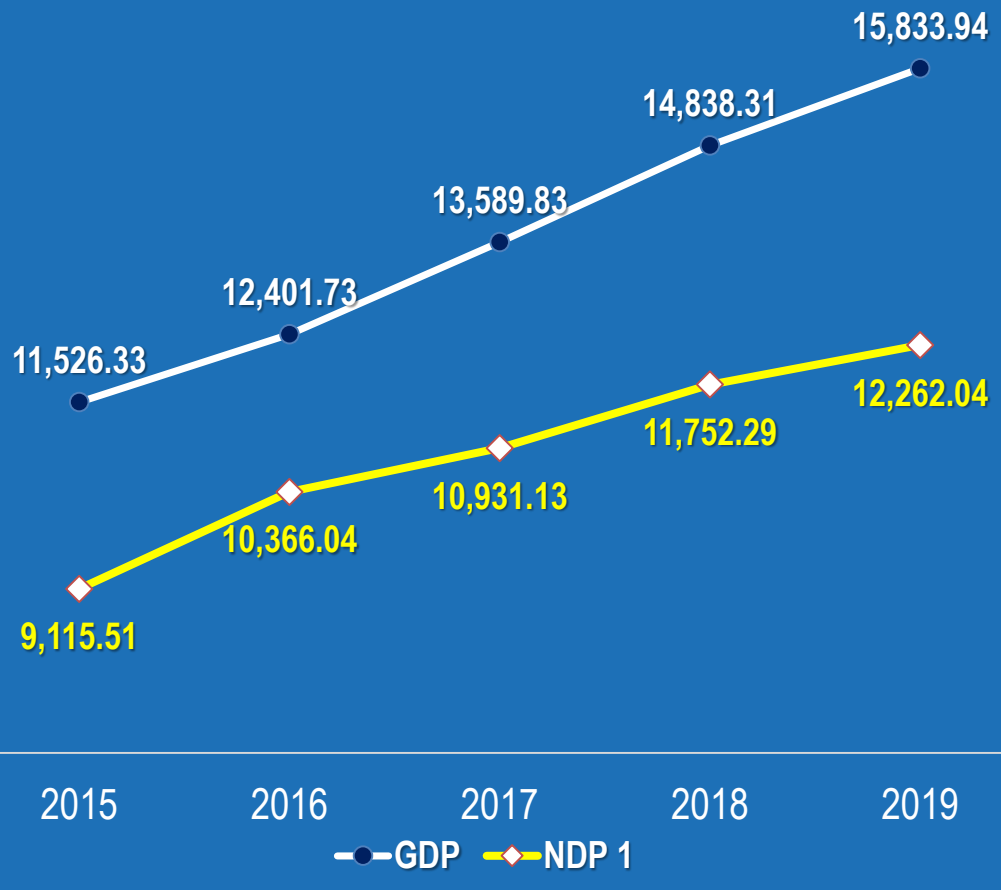
Net Domestic Product (NDP)-1

NDP 1 is an aggregate resulted from GDP subtracted by consumption of fixed capital and depletion of natural resources.

NDP 1 = GDP – Consumption of fixed capital – Depletion

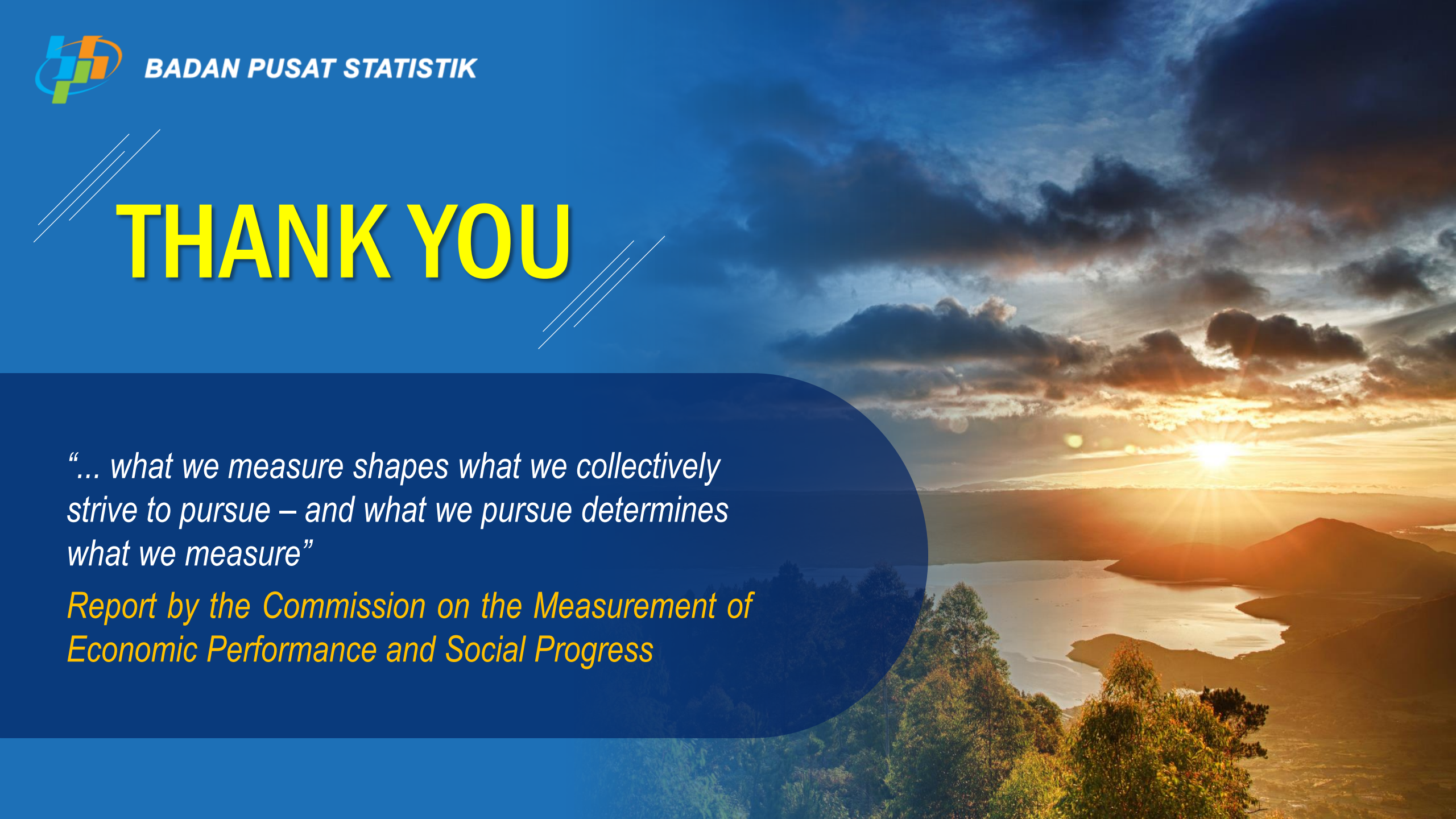
Description	Value in 2019 (trillion IDR)
Gross Domestic Product (GDP)	**15.833,94**
Consumption of Fixed Capital	3.168,10
Net Domestic Product (NDP)	**12.665,84**
Depletion of Natural Resources	403,80
Depletion-Adjusted NDP (NDP 1)	**12.262,04**

GDP and NDP-1 of Indonesia, 2015-2019
(*trillion IDR*)



BADAN PUSAT STATISTIK

THANK YOU

"... what we measure shapes what we collectively strive to pursue – and what we pursue determines what we measure"

Report by the Commission on the Measurement of Economic Performance and Social Progress