Role of National Statistical Offices (NSOs) in reporting under the Paris Agreement

Chapter 3 of Guidance Report prepared by UNECE Task Force on the role of NSOs in achieving national climate objectives

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August 29, 2023; Geneva Switzerland

Outline draft Guidance Report; Chapter 3

3 Reporting under the Paris Agreement

3.1 Introduction

3.2 Policy context and definitions

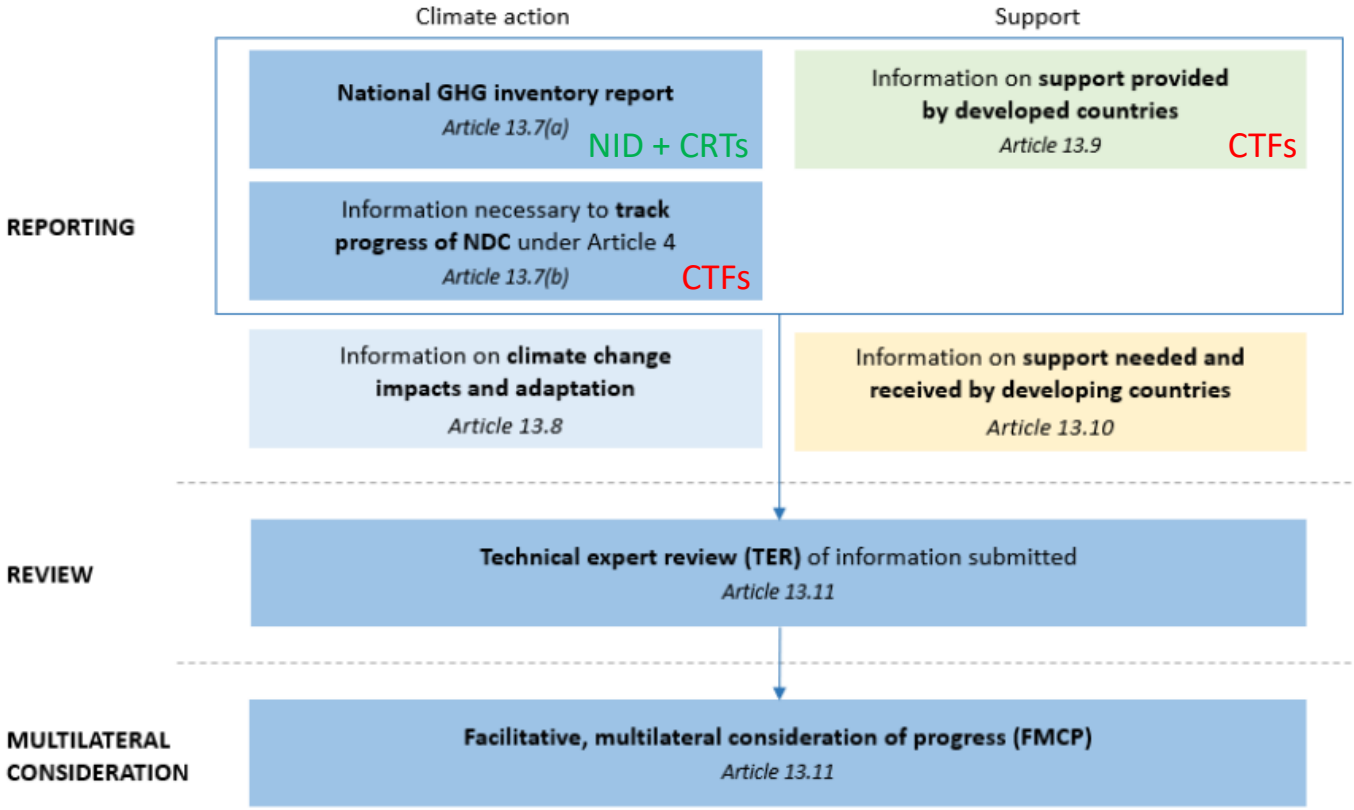
3.3 How NSOs can contribute

3.4 Conclusions and recommendations

Contents: see draft Guidance Report (version August 14, 2023)

Also: Enhanced Transparency Framework scheme from UNFCCC training programmes for expert reviewers -> Course A

Enhanced Transparency Framework (ETF)



NDC = Nationally Determined Contributions

BTR = Biennial Transparency Report

NID = National Inventory Document

CRTs = Common Reporting Tables

CTFs = Common Tabular Formats

Climate Actions

Monitoring

Outline draft Guidance Report; Section 3.2

3.2 Policy context and definitions

3.2.1 Reporting requirements related to UNFCCC under the Paris Agreement NDCs -> ETF -> BTR

3.2.2 Data related to these reporting requirements

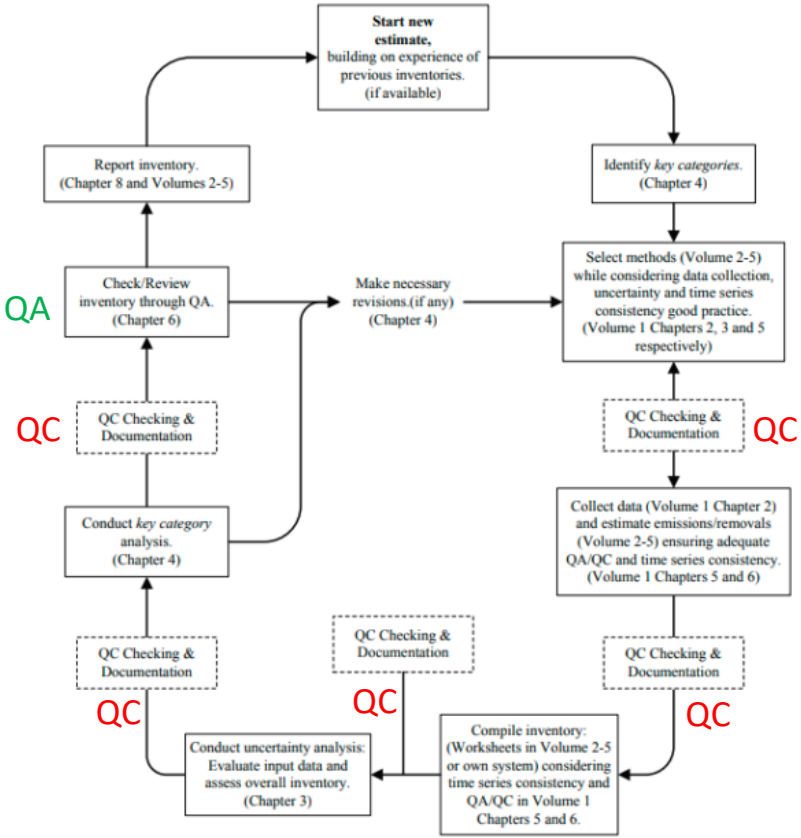
GHG inventory (NIR=NID+CTRs) and NDC monitoring (CTFs)

Mandatory reporting on progress of mitigation policies

Voluntary, but encouraged, reporting on adaptation policies

3.2.3 Steps in a typical reporting cycle

Steps in a typical reporting cycle (GHG inventory)



Quality Control (QC) and
Quality Assurance (QA)

according to
TACCC principles

Transparency
Accuracy
Completeness
Consistency
Comparability

Improved reporting by
an iterative process with
flexibility provisions for
developing country Parties

Outline draft Guidance Report; Section 3.3

3.3 How NSOs can contribute

3.3.1 Official statistics in the context of greenhouse gas emission inventories

3.3.2 Tracking Nationally Determined Contributions (NDC)

3.3.3 Challenges facing statistical systems in the context of climate change measuring

3.3.4 Lessons learnt and best practices in UNFCCC reporting requirements

3.3.5 Institutional arrangements

Strengths of NSOs in GHG inventories

1) High quality standards of professional independence and quality
2) Expertise in classifications, definitions, and statistical frameworks
3) Important data providers, with coordinating role, in many areas
4) Solve data gaps and provide long-term stability of existing data
5) Activity data for emission calculations; Links to socio-economic data

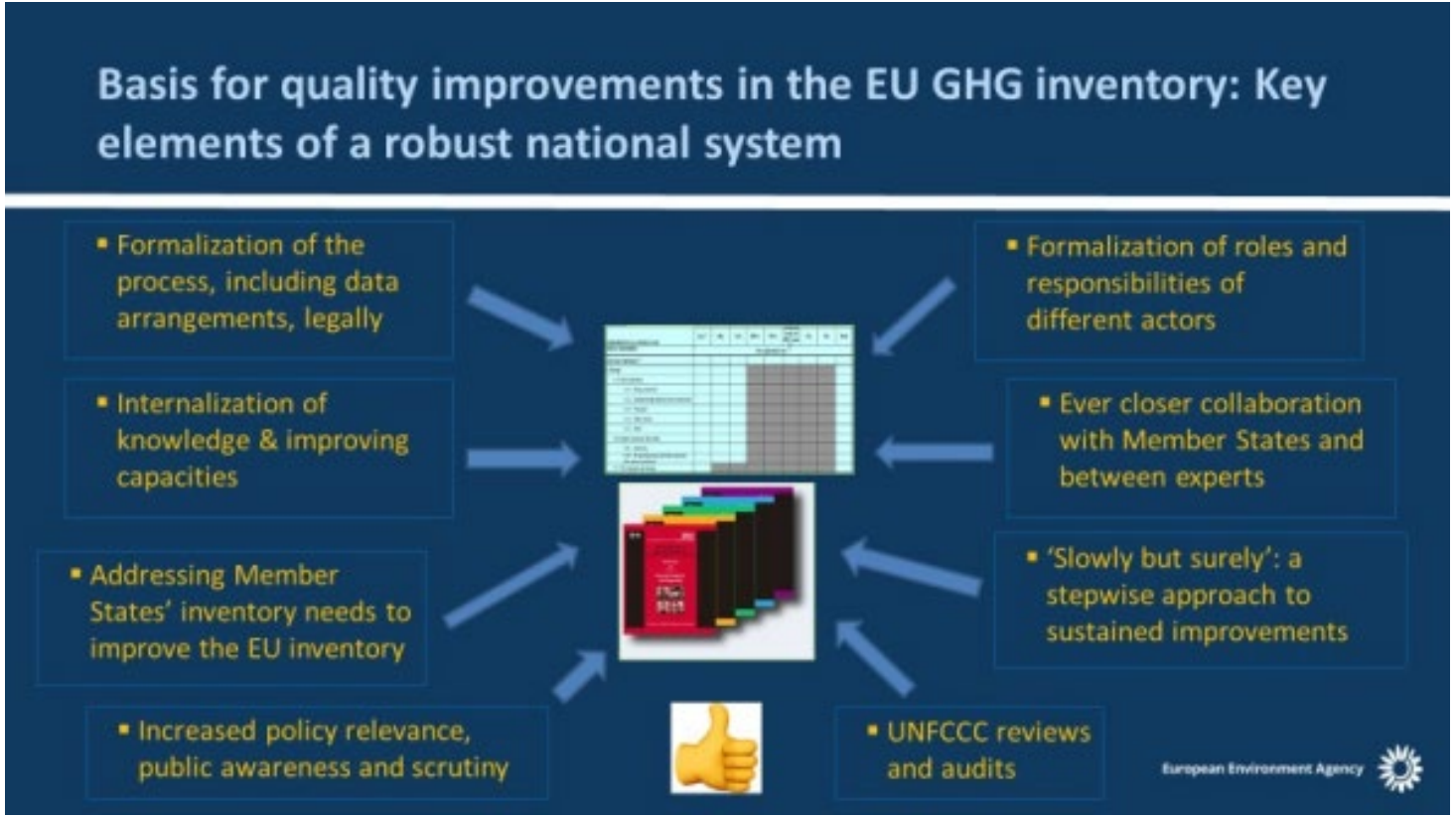
Challenges: a) Joint working groups: inventory community ↔ NSOs

Which areas (energy data, LULUCF, …)?

b) More involvement of NSOs into NDC tracking

How?

Institutional arrangements



3.4 Conclusions and recommendations

- Need for continued efforts for progressive capacity developments

- Internalizing the lessons learnt using documentation like reports, metadata, publications, etc.

What else?

Role of National Statistical Offices (NSOs) in informing climate change mitigation policies

Chapter 4 of Guidance Report prepared by UNECE Task Force on the role of NSOs in achieving national climate objectives

Arthur Denneman; Statistics Netherlands

August 29, 2023; Geneva Switzerland

Outline draft Guidance Report; Chapter 4

Data demand

Data supply

Contents: see draft Guidance Report (version August 14, 2023)

Mitigation definition

4.2.1 Mitigation definition

231. In the glossary of IPCC Sixth Assessment Report the following mitigation definitions are given:

> ***Mitigation (of climate change)***: *A human intervention to reduce emissions or enhance the sinks of greenhouse gases.*
>
> ***Mitigation measures***: *In climate policy, mitigation measures are technologies, processes or practices that contribute to mitigation, for example, renewable energy technologies, waste minimisation processes, and public transport commuting practices.*

232. The mitigation definition in the glossary of UNEP Emissions Gap Report is essentially the same, though additional examples for mitigation measures are given, e.g., using fossil fuels more efficiently for industrial processes or electricity generation, switching to solar energy or wind power, improving the insulation of buildings, and expanding forests and other 'sinks' to remove greater amounts of CO2 from the atmosphere.

Overview mitigation policies

Climate Actions and Policies Measurement Framework (CAPMF)				Illustrative examples
I.1.a	Sectoral policies	Market-based instruments	Electricity	Financial support renewables
I.1.b			Transport	Fuel taxes
I.1.c			Buildings	Insulation subsidies
I.1.d			Industry	Carbon pricing
I.1.e			Agriculture	Precision farming support
I.1.f			LULUCF	Conservation payments
I.1.g			Waste	Disposal fees and charges
I.2.a	Sectoral policies	Non market-based instruments	Electricity	Coal phase out
I.2.b			Transport	Electrification
I.2.c			Buildings	Mandatory energy labels
I.2.d			Industry	Energy efficiency mandates
I.2.e			Agriculture	Livestock reduction
I.2.f			LULUCF	Expanding forests
I.2.g			Waste	Improved recycling
II.A	Cross-sectoral policies	Greenhouse gas emission targets		
II.B		Public research & development expenditure		
II.C		Fossil fuel production policies		
II.D		Climate governance		
II.E		Climate finance		
III.X	International policies	International co-operation		
III.Y		International public finance		
III.Z		Greenhouse gas emissions data and reporting		

Source: OECD

Mitigation options in NDCs

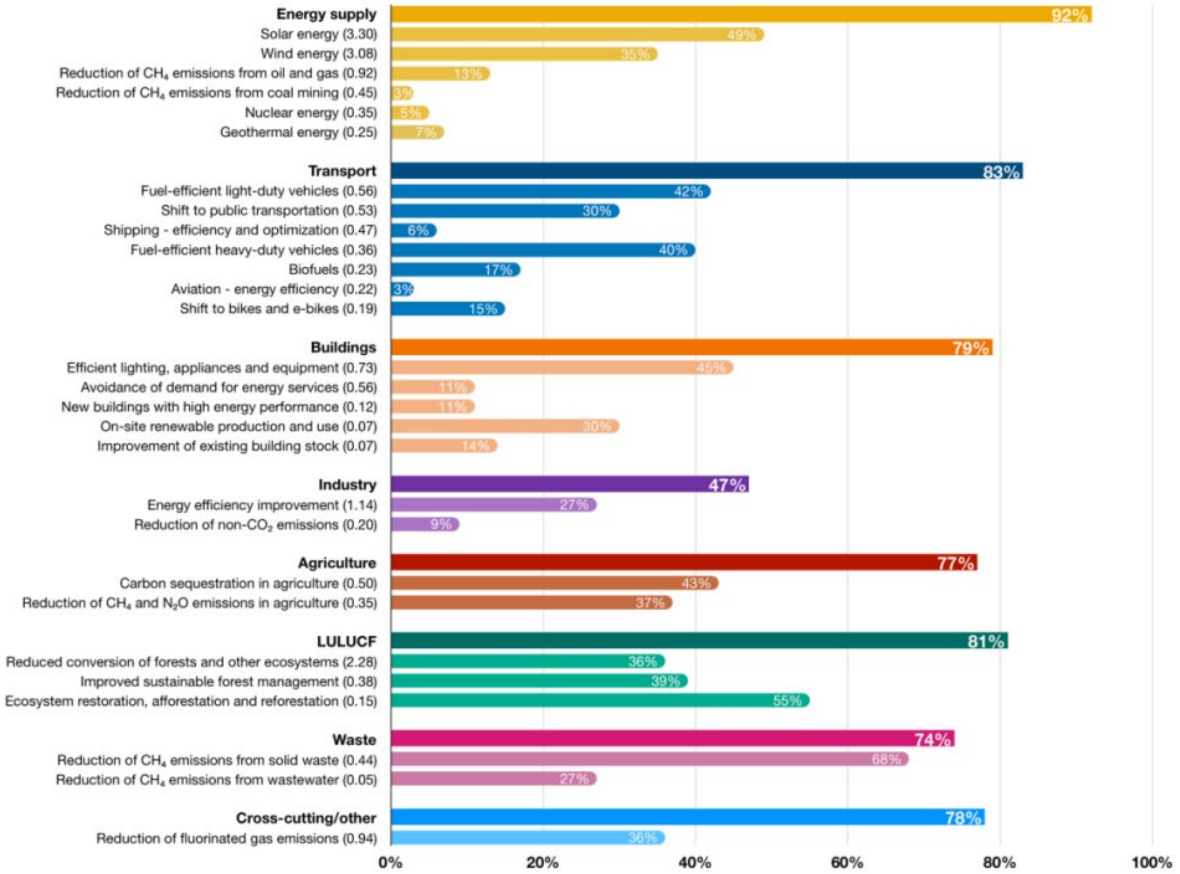
Share of Parties

and

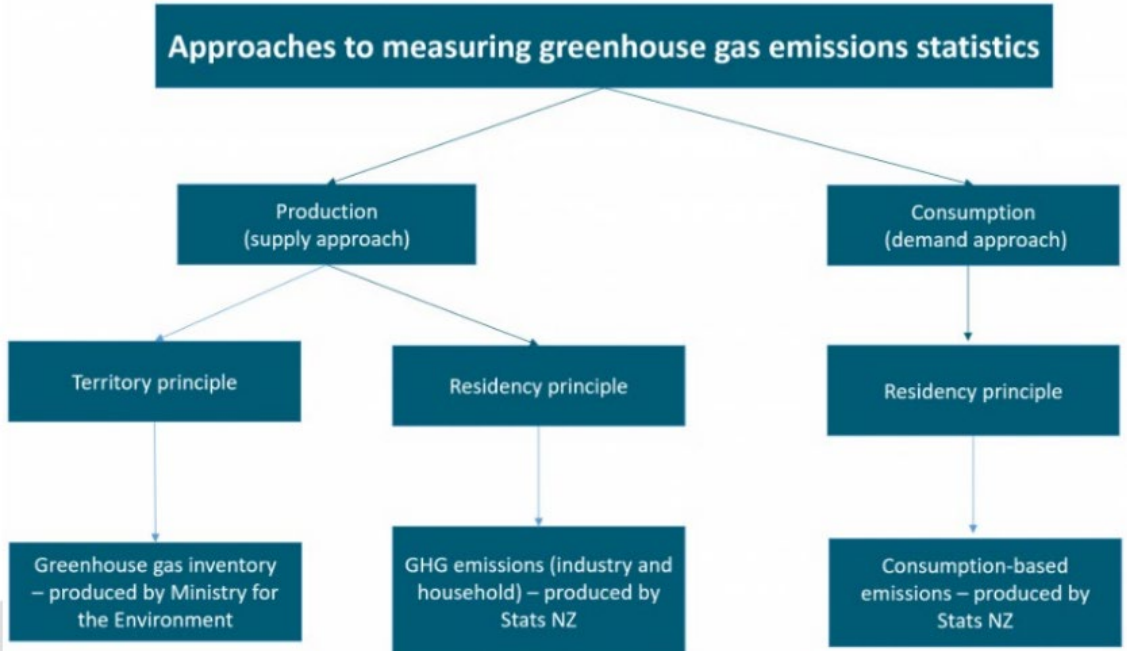
Net emission reduction potential (in Gt CO2-eq/yr)

From NDC synthesis report (2022)

Country examples also from IEA Policies and Measures Database



Additional examples related to mitigation policy



IPCC

Memo item:
Bunker fuels

SEEA

National Accounts

SEEA

Also emissions from biomass and international transport

See also:

IMF G20 Data Gaps Initiative 3

Eionet Group on Climate Change Mitigation and Energy Systems

EEA biefing on decarbonisation agricultural sector

How NSOs can contribute; international perspective

Eurostat Statistics Explained

- Inventories, Air emission accounts and Carbon footprints
- Climate change – driving forces
- SDG 13 – climate action

Indicators and Dashboards

CES Indicator set, UNSD Global set, Eurostat Database, OECD/IPAC Dashboard, IMF Dashboard, EEA indicators, and IEA data focused platforms (clean energy transition)

Importance of Energy Statistics

GHG emissions: ¾ [Energy sector] + ¼ [Agriculture, LULUCF, Fluorinated gases]

307. NSOs should adopt a well-designed energy data collection strategy which:

- Is planned in accordance with the national context and allocated budget.
- Promotes dialogue between energy statistics and policy making to raise awareness of existing data needs and long-term objectives.
- Facilitates institutional arrangements for data collection.

308. NSO should ensure to promote staff capacity and stability. Qualified staff who understand key energy concepts and the methodological particularities of energy statistics are an absolute requirement for the development of energy-related data at a national level. In addition, it is important to build capacity in different data collection methodologies (including administrative sources, surveys, modelling and metering), and how to derive indicators from the raw data collected.

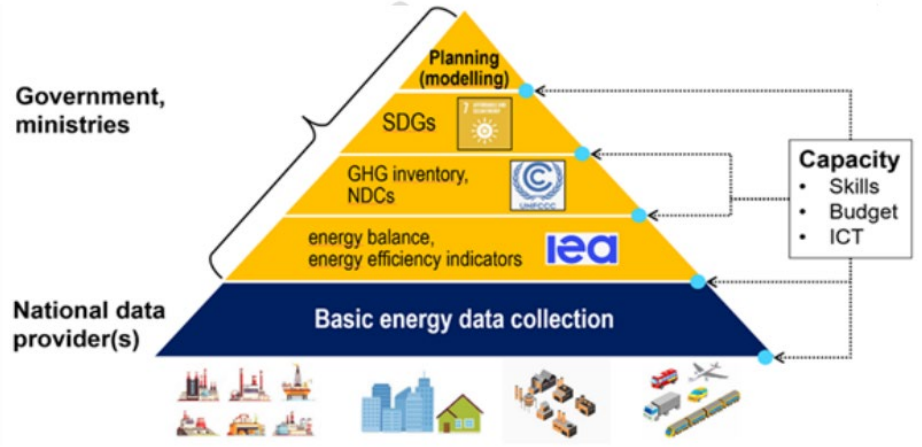
IEA roadmaps: Demand-side data and energy efficiency indicators
Tracking Public Investment in Energy Technology Research

Independent check GHG emissions: Sectoral versus Reference approach

Data collection –> indicators for policy-making

Methodology	Pros	Cons
Administrative data sources	Avoid cost of a new data collection process	Boundary issues: potential mismatch between definitions and target populations of existing data and data needed
	Available relatively quickly	Challenges in establishing and maintaining communication with the source organisation
	Increase synergies between institutions	Potential costs (direct and indirect: e.g. purchasing data, establishing agreements, adapting data formats)
	Raise profile and interest of energy data among various services	One-off time investment in search for data sources
Surveying	Relatively cost-effective, given extensive information collected	Potentially high absolute cost
	Ad-hoc design of items collected based on purpose	Time consuming
	Representativeness/statistical significance	Need for further estimation work (e.g. extrapolation between years)
	Overall, comprehensive and good quality information	Risk of incomplete responses, biases, sampling errors
		Requirement of staff training
Measuring (metering)	Provides actual energy consumption at end-use or equipment level	High cost of equipment
	High accuracy of collected data	Small sample of population and time/lack of representativeness
	Can shed light on actual behavioural patterns	Possible malfunctioning of equipment
	Can be a key complement to other methodologies	Difficulties in finding volunteers
Modelling	Cost-effective	Relies on availability of input data
	Designed based on purpose	Depends on quality of input data
	Can consolidate data from multiple sources	Depends on model assumptions
	Can provide estimates of variables that cannot be measured	Transparency may be an issue
	Allows validation of bottom-up estimates against national energy statistics	

Source: Adopted from IEA Energy Efficiency Indicators: Fundamentals on Statistics (2014)



How NSOs can contribute; country examples

Luxembourg: IPCC inventory ↔ SEEA air emission accounts

New Zealand & Denmark: Production, Consumption, Footprints

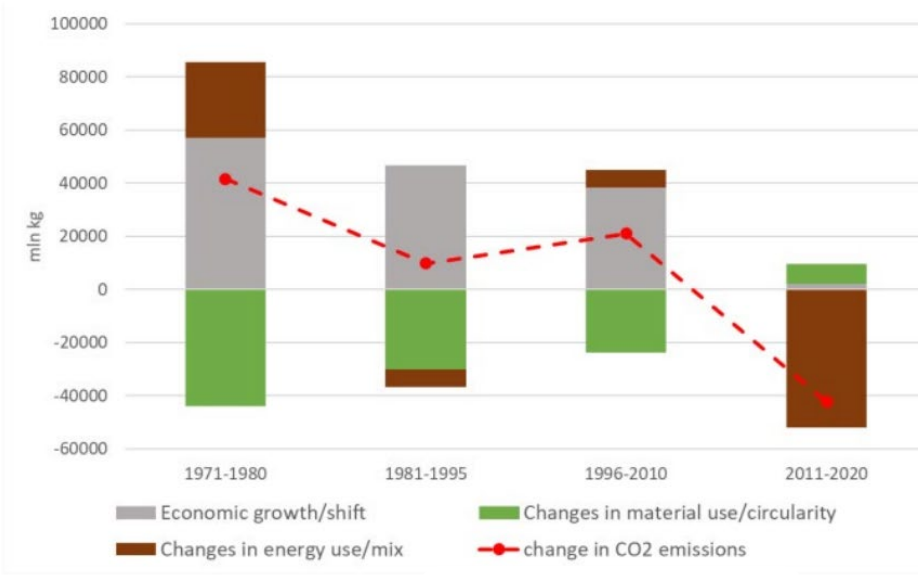
The Netherlands: Quarterly GHG emissions (SEEA and IPCC)

Cyprus, Greece, Serbia, and Ireland: Census data on housing characteristics (related to energy transition)

UK & Spain: Dashboards (climate change-related; EU Green Deal)

Ireland: Data Stewardship and Use of administrative (micro)data

Academic usage: SEEA Material Flow Accounts



Source: Index Decomposition Analysis (The Netherlands)

Future challenge
further electrification

Availability of
critical minerals
(cobalt, lithium, …)
for batteries,
solar panels,
and electric cars

Which 'enablers'
do exist for
successful
transitions?

What NSO data?

Monitoring Pyramid used in the Netherlands

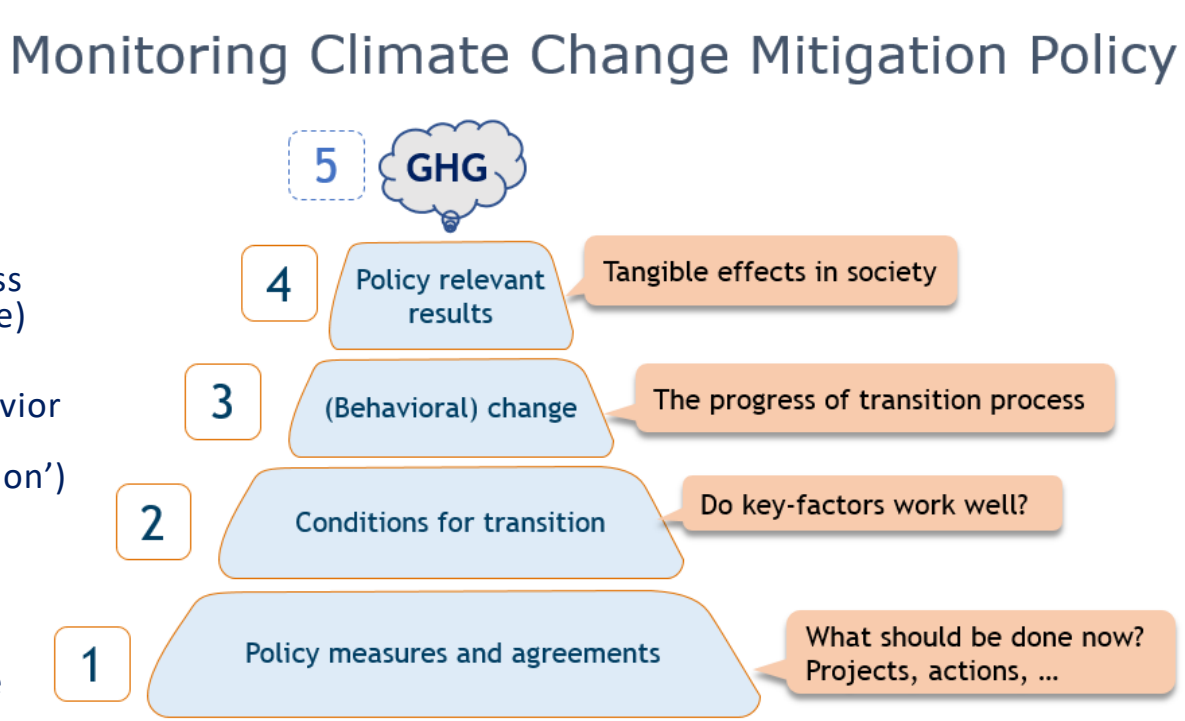
Main target can be quantified (for national total and sectors)

Monitoring of transition process itself (e.g. energy infrastructure)

Perception, attitudes and behavior of households, companies and governments (also ‘just transition’)

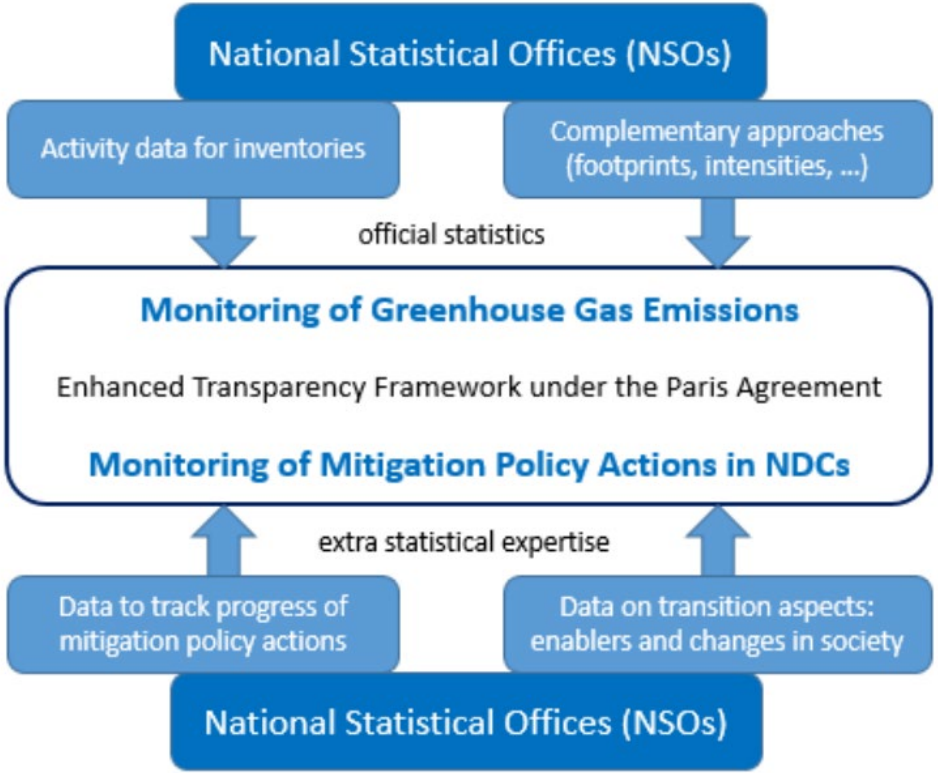
Availability of critical minerals

Monitoring of ‘enablers’, like climate finance and labor force



Each monitoring level requires its own information & intelligence.

Role of NSOs in ETF (Paris Agreement)



Data Demand (ETF)
versus
Data Supply (NSOs)

Availability of information is overwhelming

High level approach instead of identifying data gaps at a granular level

Recommendations

(a) An international meeting platform can be established, possibly with national counterparts, bridging the data gap between what NSOs can contribute (supply side) to what is needed in the ETF mitigation domain (demand side).

(b) This meeting platform can provide more detailed descriptions of the ETF mitigation policy data needs (using the CAPMF classification), more guidance on producing the requested NSO data, and effective collaboration in solving identified data gaps (e.g., by developing a CISAT-like tool).

(c) The NSOs need capacity building for further development and extensions of official statistics and other tailor-made (micro)data, in particular the variety of data needed to monitor the clean energy transition and other transitions envisaged in NDCs.

CISAT = Climate change statistics and Indicators Self-Assessment Tool