



unitar

United Nations Institute for Training and Research

Measuring plastic flows with Plastic-KEYs

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Data sources

Total supply of products

= Production



Official statistics

+ Imports



Official statistics

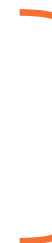
Total use of products

= Intermediate consumption

+ Household final consumption

+ Gross capital formation

+ Exports



Apparent
consumption



To be calculated



Official statistics

$$\textit{Apparent consumption} (t) = \textit{Production} (t) + \textit{Imports} (t) - \textit{Exports} (t)$$

Plastic waste generated  To be calculated based on material flow analysis

Methodology overview:
Estimation of plastic waste generated



Apparent consumption



Plastic waste generated

$$Plastic\ Waste\ Generated\ (n) = \sum_{t=t_0}^n f * Apparent\ Consumption(t) * L^p (n - t)$$

Scope of Plastic-KEYs

Key terms related to plastic

Plastic in primary forms

Semi-finished plastic products

Finished products

Finished plastic products

Plastic containing products

plastic embedded in plastic containing products:

plastic fraction * plastic containing products



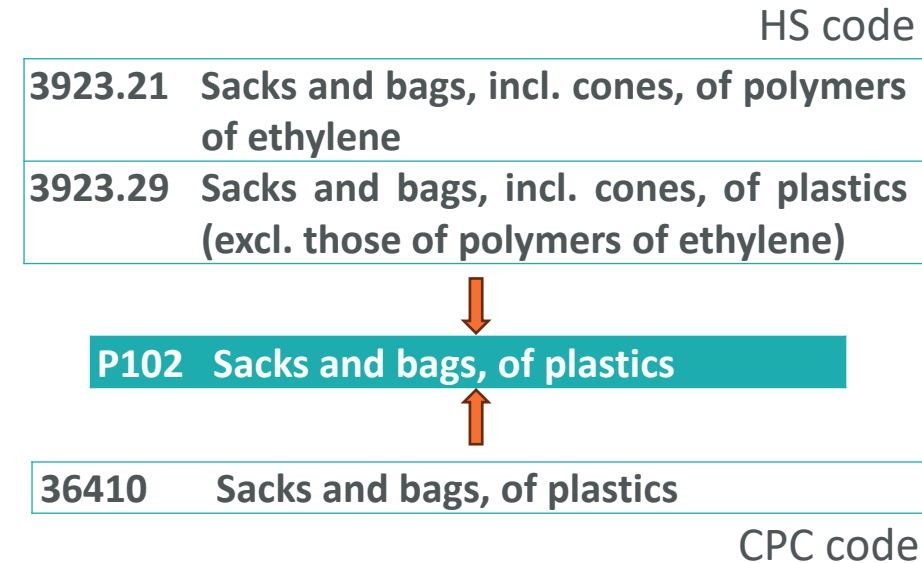
Classification system developed by UNITAR: **Plastic-KEYs**

Plastic-KEYs

- Products with *similar function*
- Product with *comparable material composition*
- Products with *similar end-of-life characteristics*

Eight Plastic-KEY Groups:

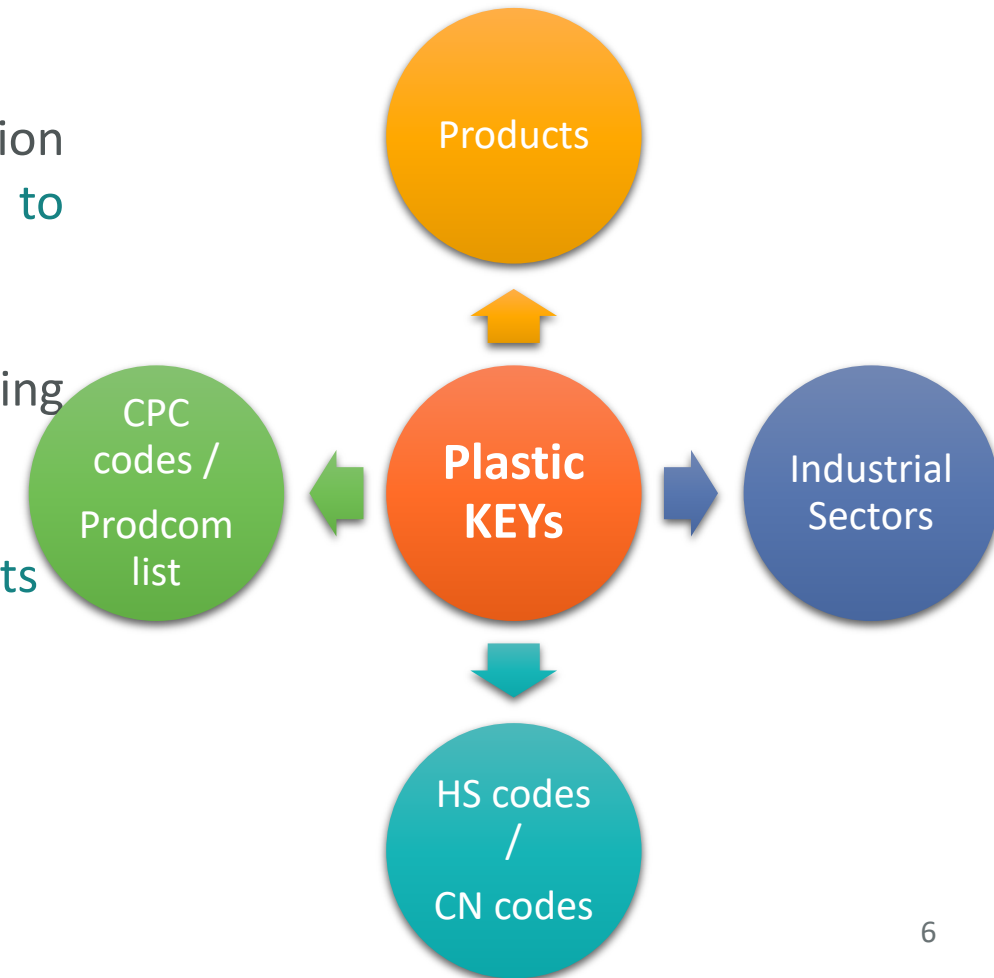
- P1 Packaging
- P2 Transport
- P3 Building and construction
- P4 Electrical and electronic equipment
- P5 Consumer and institutional products
- P6 Industrial machinery
- P7 Textiles
- P8 Other



Statistical use of Plastic-KEYs





Statistical use of Plastic-KEYS

- To collect statistical data on trade by linking HS codes / CN codes to Plastic-KEYs
- To collect statistical data on production by linking CPC codes / Prodcom list to Plastic-KEYs
- To convert unit to weight by applying average weights
- To collect data on lifetimes of products







Plastic-KEYs
in practice:
Plastic Toolkit

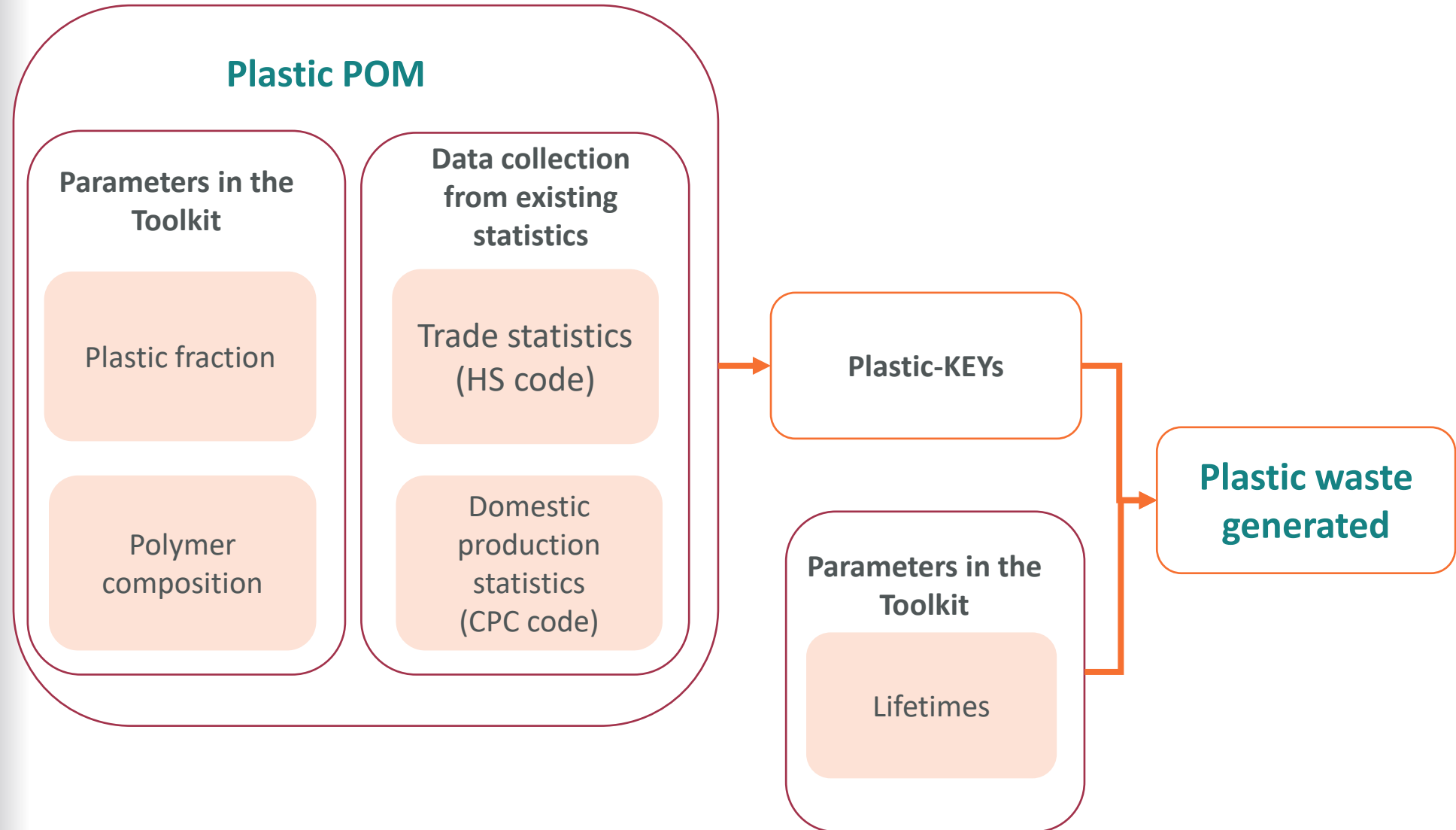
Plastic Put on Market (POM) Tool

	A	B	C	D	E	F	G	H	I	J	K
1	Plastic Embedded POM Calculation Tool										Hide Sheets
2											
3											Show Sheets
4		Input import/export data									
5		Input domestic production data									
6											
7											
8											
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25											
26	Commisioned by										
27											
28		UN environment programme									
29											
30											
31											

Plastic Waste Generated (WG) Tool

	A	B	C	D	E	F	G	H	I	J	K
1	Plastic Waste Generated Calculation Tool										Hide Sheets
2											Show Sheets
3											
4											
5											
6											
7											
8		Country: A									
9											
10		Calculate Plastic Waste Generated									
11											
12											
13											
14											
15		Export results									
16											
17											
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38											

Plastic-KEYs in practice: Plastic training



- Maximum use of readily available statistical data sources
- Pre-filled datasets of countries can be provided
- Draft training toolkit is available providing guidance to perform the calculations

Plastic-KEYs in practice: Plastic Monitoring

- **Plastic Put on Market**
 - By sector
 - By polymer type (PE; PP; PS; PVC; PET; PUR; Other)
 - Total Put on Market in each country/region
 - Put on Market per capita in each country/region
- **Plastic Waste Generated**
 - By sector
 - By polymer type (PE; PP; PS; PVC; PET; PUR; Other)
 - Total Plastic Waste Generated in each country/region
 - Plastic Waste Generated per capita in each country/region

Challenges

- Unified units of measurement for plastic in statistics
- Plastic fractions in different Plastic-KEYs and relevant HS /CN /CPC codes
- Polymer composition for Plastic-KEYs
- Plastic existence in different waste streams

Thank you!

