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E-waste statistics

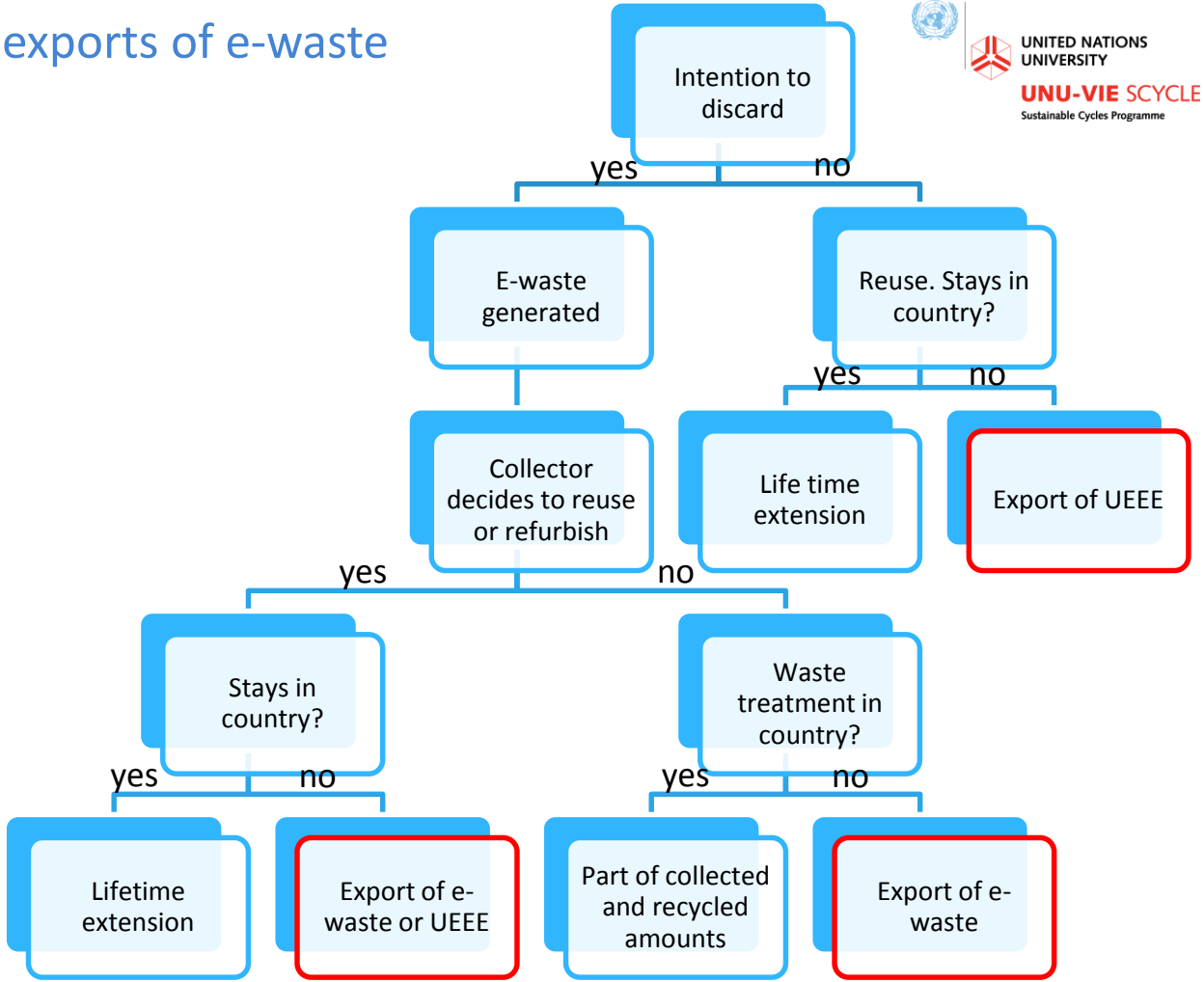
How to measure imports and exports of e-waste

April, 2018 – E-waste statistics workshop - Zanzibar

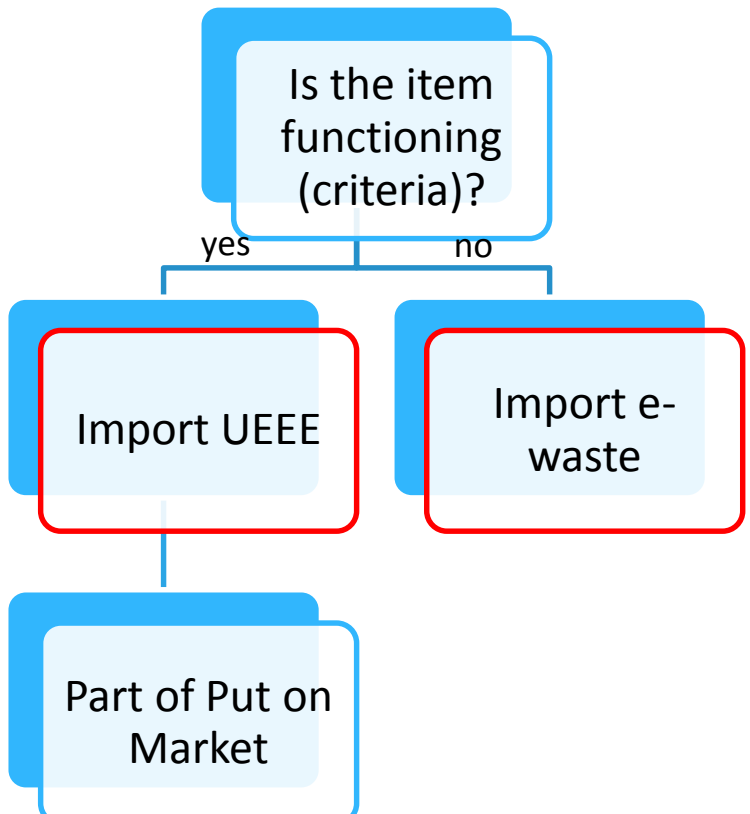
Outline

- Introduction
- Import/ export behavior
- Current state
- Existing data sources for import/ export of e-waste and used equipment
- Novel methods

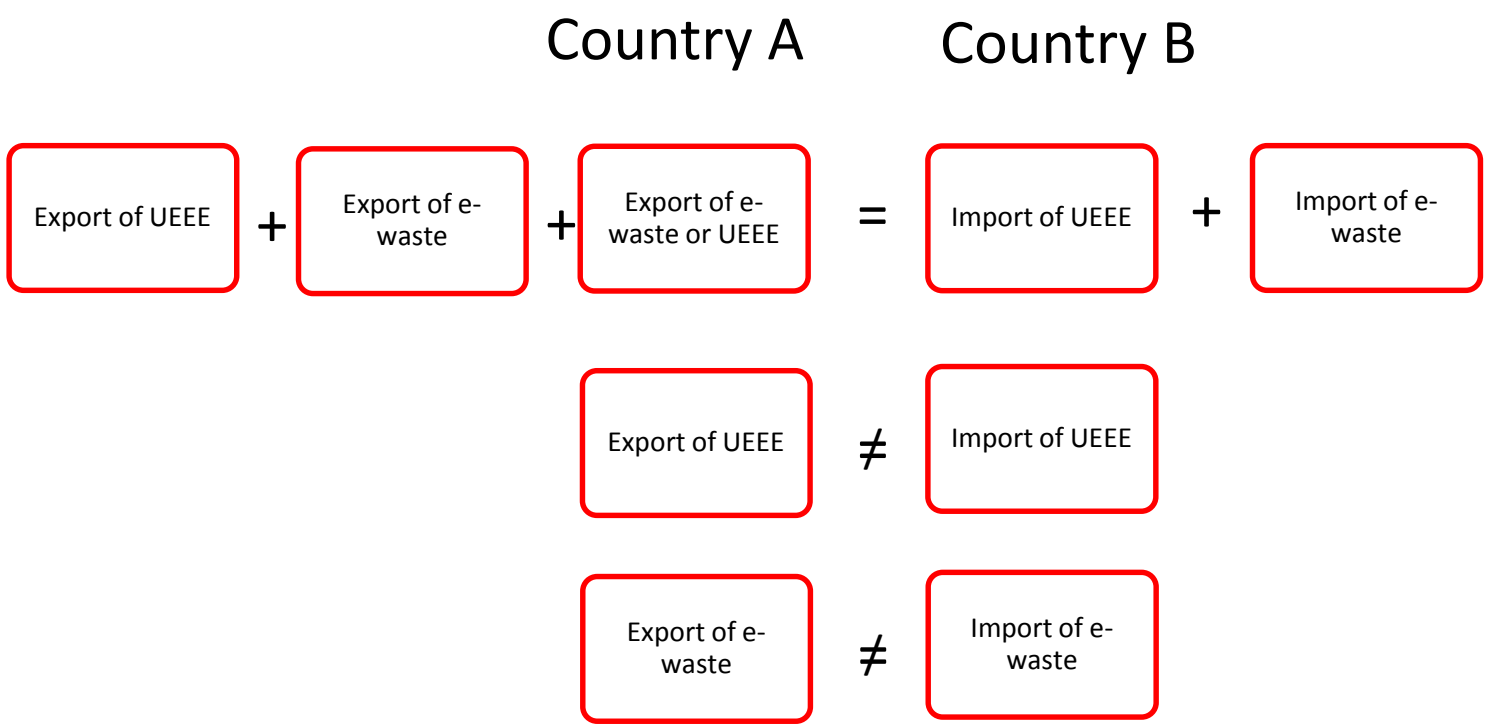
Behavior related exports of e-waste



Behavior related imports of e-waste



Imports vs exports



Current state

Transboundary movement of e-waste reporting under Basel Convention limitations:

- Incomplete reporting
- Ambiguous definitions
- Incorrect categorization
- Discrepancies in reporting
- Data inaccuracies
- Only legal shipments of hazardous e-waste are documented

Basel codes	Classifies waste depending on their chemical properties (no distinction between hazardous and not hazardous) For example: A2010 -> glass from cathode ray tubes and other activated glass.
Illegal Shipments	Extrapolations from customs data on export violations Identifying the data gap from national material flow analysis
Classifica-tions	Imp/exp is captured in trade statistics: (HS codes) codes as classification unit. HS codes do not distinguish between new and used electronics.

Existing data sources for import/ export of e-waste and used equipment

- Extrapolations from customs data on export violations
- By identifying the data gap from national material flow analysis

High level of uncertainty, due to:

- Absence of complete datasets on all e-waste flows
- Fluctuation caused by market and social conditions

Novel methods

- Business statistics
- EPR Registers
- Trade codes
- GPS trackers
- Consignment notes
- Promising approach: Person In the Port

Method A: Use business statistics

- Questionnaires can be sent to the entire population or to a representative a sample of the companies (using business registers)
- Outcomes processed using standard statistical routines

- Measures exports / imports of e-waste and used EEE

The companies that register could be

- In the waste management sector
- Refurbishing industries
- Repair shops
- Charity shops
- Municipalities, or other type of traders.

- Not many countries are likely to have such registers
- Difficulty to define enterprises engaging in these business activities
- Illegal trafficking is not considered

Method B: EPR Registers

- Register enacted by an Environmental Producer Responsibility law
  - Mandates to track imports and exports of used-EEE and e-waste

- Measures legal flows

- Not many countries are likely to have such registers
- Illegal trafficking is not registers

Method C: Use of trade codes

- Uses International trade statistics of a country
- Discriminate used EEE and e-waste from new commodities using price information from the trade

- Difficulty to directly estimate the quantity of transboundary shipment of e-waste
- Quality of raw datasets
- Volumes of detected trade are significantly underestimates of the real totals
- Due to the level of aggregation, it reflects a mix of prices
- Deliberate wrong reported data of e-waste, such as illegal exports, are not covered
- Underestimation of the real quantities
- Misreported shipments are not taken into account

Method D: Use of GPS trackers

- The tracking of controlled WEEE ensures:
  - The safe transport of these appliances to approved locations
  - Minimizes the risk of unauthorized commercialization and exports of these products to other countries

Types of tracking devices

GPS location and mobile communication

- Reporting the products locations at regular intervals
- Report autonomously
- Accurate location points

Self-identifying tags

- Radio frequency identification technology (RFID)
- Be detected at close range using a reading device
- Requires a pervasive infrastructure and resources

Active location sensors (VHF)

- Radio transmissions for reporting locations
- Lower tracking range

Method D: Use of GPS trackers

- Extrapolation of the results is the most challenging part of the method

- Where to place the trackers
  - Representative sample
  - Broken or functioning equipment
  - Strategic place to be brought to various waste collection channels in the country
  - Charity shop
  - Metals scrap dealer

- Shows real trade routes
- Measures legal and illegal flows

- Battery life constraints
- Sample size
- Tracking devices should be waterproof
- Not all countries have the same mobile network
- Expensive

Method E: Consignment notes for the import or export of e-waste

- National regulations might have also established a system of consignment notes that must be completed for all shipments of e-waste.
  - Information on the quantity of the e-waste shipped (by e-waste category and disposal or recovery operation)
  - Specifications criteria for import and export

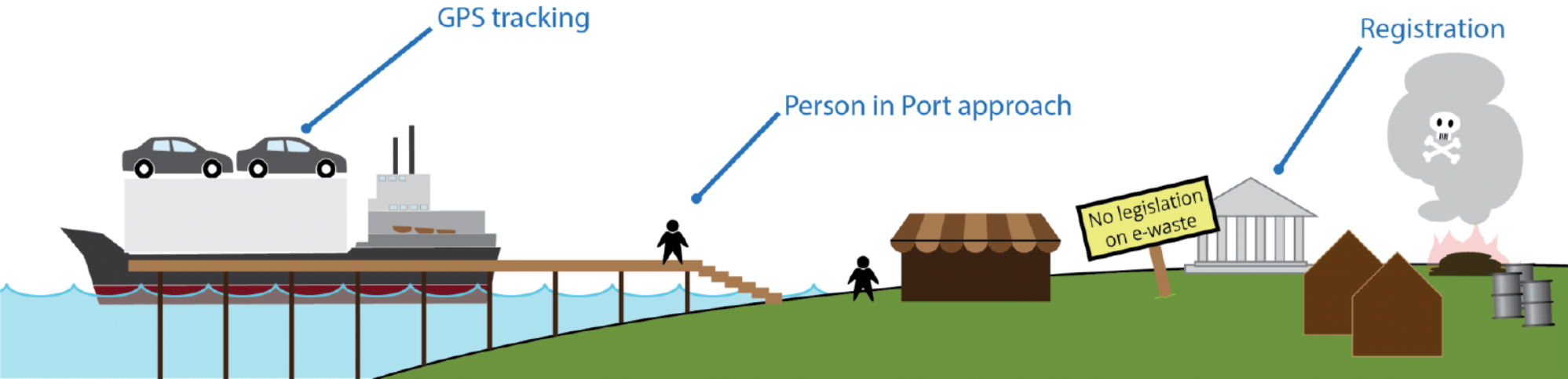
- Shows real trade routes
- Measures legal flows of UEEE and e-waste

- Need a law
- Illegal trade is not measured

Promising approach: Person In the Port

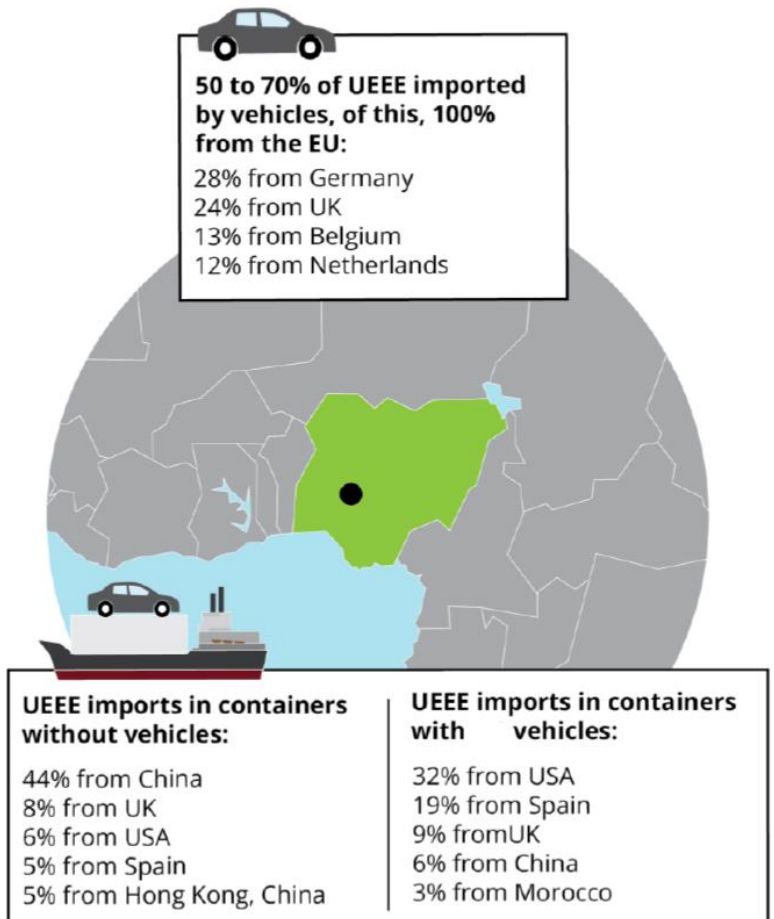
- Physical inspections
- Import statistics
- Declarations for custom authorities.

- This percentage can be used to extrapolate the data to national statistics



Promising approach: Person In the Port

- In 2015/2016, around 71,000 t of UEEE were imported annually into Nigeria through the two main ports in Lagos.



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Thank you for your attention!