



Classification of Physical Flows

*UNSD in cooperation with the Sub-group
of the London Group*



Introduction: Status of Proposed Classification

- Proposal made to London Group on Environmental Accounting at May 2009 meeting
- Discussions took place within the sub-group
- Consultation with Eurostat experts on waste statistics
- Discussion by the Expert Group Meeting on Classification (September 2009)
- Comments on revised proposal have been received but not included in the paper yet



Information needs for tracking physical flows

- Need to track flows of materials from the environment to the economy, within the economy, returns to the environment
- Use for policy analysis, waste management
- Includes materials with no monetary value
- Principle of material balance requires information not usually found in economic accounts



Frameworks for definition and classification of solid waste

- Central Product Classification Version 2 (CPC Ver. 2)
- SEEA 2003
- Waste Framework Directive (WFD):
European Waste Commission Statistical Classifications (EWC Stat)



SEEA-2003 flows

- **Flows of natural resources and ecosystem inputs**
Classified using the asset classification
- **Physical product flows**
Classified according to CPC
- **Residuals**
Combine several classifications including solid waste



Issues

1. Definition of waste and the scope of the waste accounts
2. Distinctions between products and residuals
3. Alignment of the classification with the SEEA system boundaries
4. Classification for waste, residuals and ecosystem inputs



Definition of waste

SEEA-2003

- **Products** are goods and services produced and used within the economic sphere, including residuals that have positive value to the generator
- **Residuals** are not uniquely defined
 - Incidental and undesired outputs from the economy that have zero value to the generator
 - Flows from the economy to the environment
- **Waste** is sub-item of residual – solid waste that stays within the economy



Definition of waste – Cont'ed

CPC ver. 2

- Covers everything that is transacted within the economy (products and waste- CPC 39)
- Principles of CPC
 - Industrial origin
 - Physical characteristics of product
- Waste scattered in several CPC classes
- Value is not a criterion for product definition
- CPC not appropriate for waste



Definition of waste – Cont'd

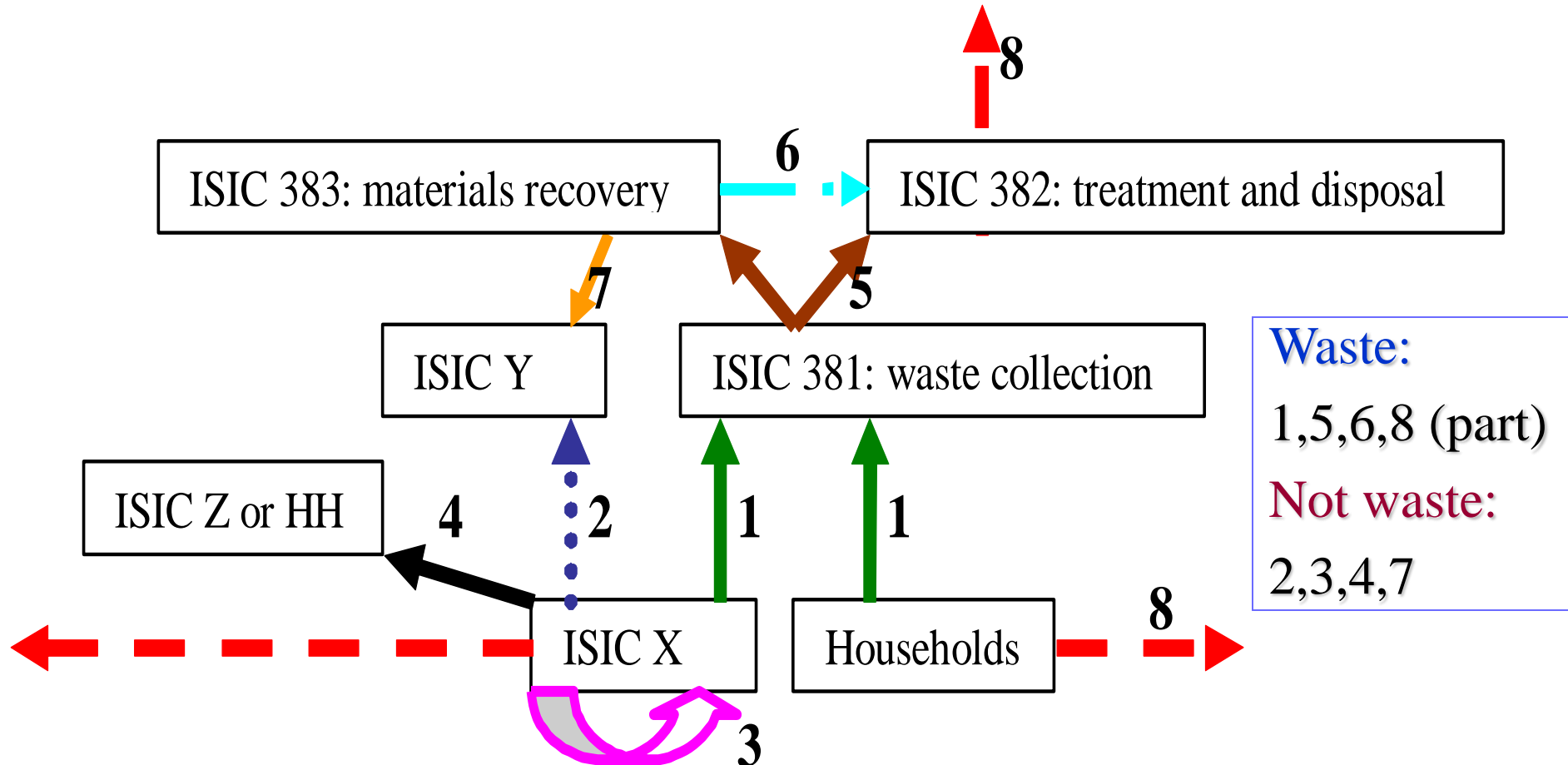
Proposed definition of waste (based on WFD)

Waste includes all materials that are discarded and are not reused, regardless of their destination or monetary value

- Materials discarded directly to the environment without treatment are waste
- Materials reused without needing treatments are NOT waste
- Materials discarded and subsequently treated and recycled are waste until recovered
- Material collected by a waste collection scheme are waste
- Definition of waste does not depend on the value of the goods discarded (nor on the destination except for ISIC 38)



Scope of the waste accounts





Waste accounts gross or net?

- Gross waste accounts follow the flow of waste when it is first generated – when material is recovered some waste is generated again, etc. until when it is disposed of in a landfill or to the environment – double counting
- Should net waste accounts also be developed?

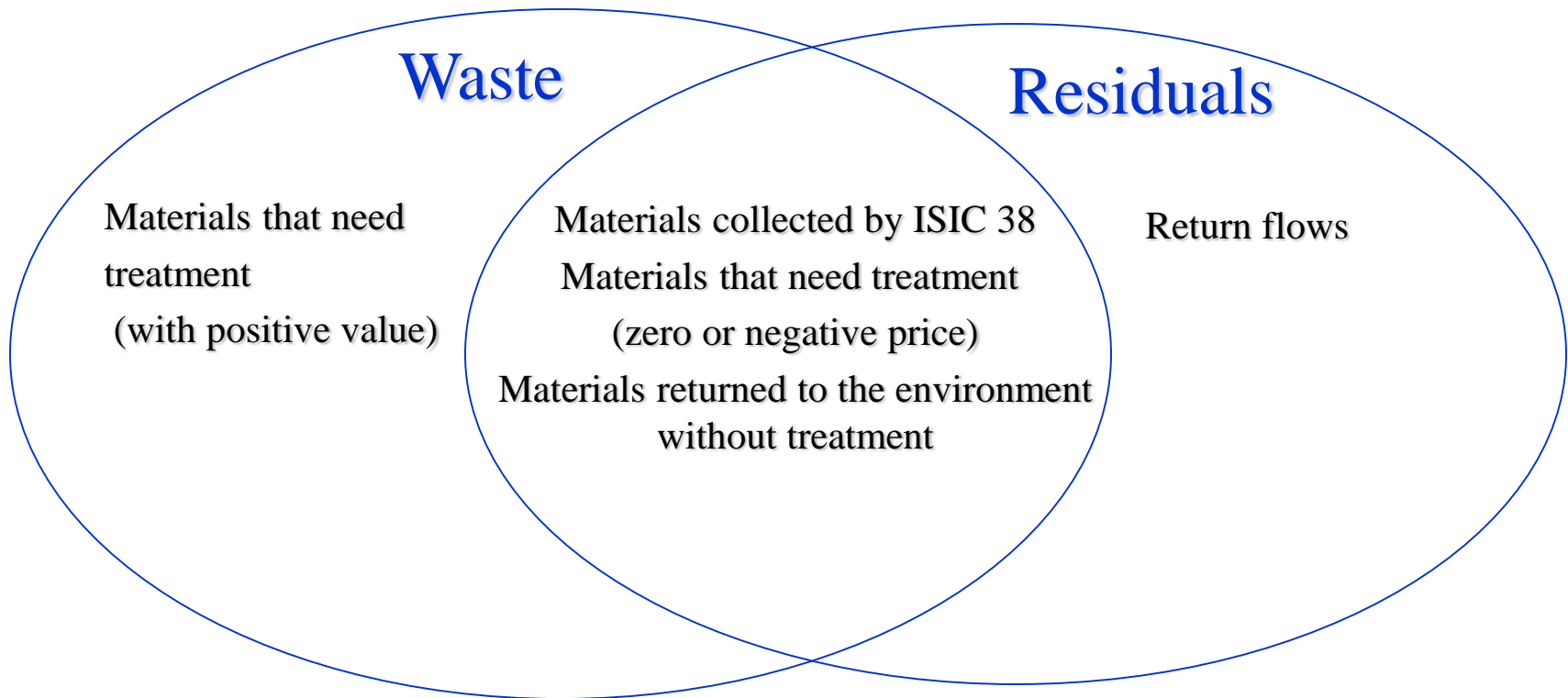


Distinction between products, waste and residuals

- Concept of products is aligned between SNA and SEEA
- SEEA physical flows have broader scope than SNA flows (include flows with zero or negative value)



Distinction between products, waste and residuals





Distinction between products, waste and residuals

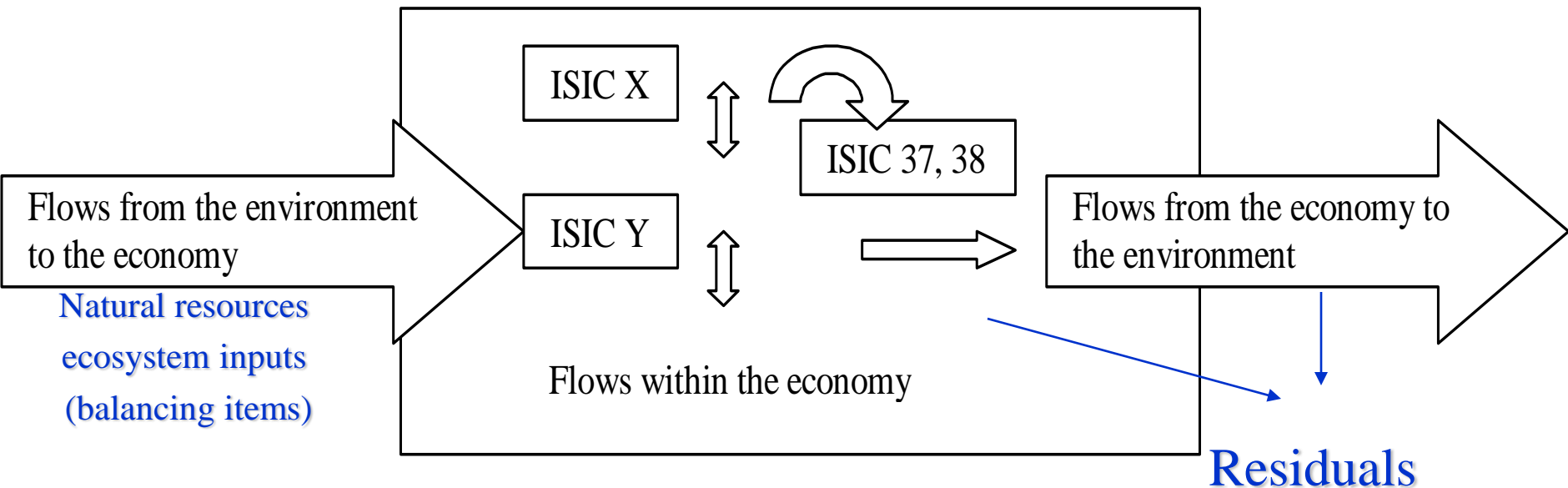
- Considerable overlap between waste and residuals
 - Do we need both?
- General opinion is to maintain the concept of residuals defined as:

Residuals as discarded materials with no monetary value

- Need to keep track of all the flows
- Need to keep track of what stays within the economy and what goes back to the environment for waste management



Classifications and system boundary





Proposed structure of physical flows classification

- Flows from the economy to the environment
 - Natural resources
 - Balancing items
- Flows within the economy
- Flows from the economy to the environment
 - Emissions to air
 - Emissions to water
 - Solid waste to uncontrolled landfill
 - Dissipative use and dissipative losses
 - Waste water (untreated)
 - Return flows (water, treated materials, etc.)
 - Balancing items (evaporation, losses, etc.)



Proposals on classifications

- Use CPC for all physical flows, if relevant categories exist, and complement it with additional categories for flows from the environment to the economy and back to the environment
- CPC not appropriate for waste: often difficult to distinguish between waste and other outputs
- Use EWC Stat to classify solid waste rather than CPC 39 and other large CPC categories
- Use the classification of flows from the environment and to the environment as proposed by Karl Schoer



Advantages of the proposal

- Alignment with CPC 2.0 and 2008 SNA
- Harmonization of terminology with the EWC (definition of waste)
- Integration of EW-MFA as one of the building blocks of SEEA by defining flows from the environment to the economy and return flows explicitly with reference to the boundary between the economy and the environment (comparable with EW-MFA concepts of inputs and outputs respectively)
- Avoiding the difficulty of having dissipative use of products, which can often only be inferred as balancing items, in a classification of residuals - they would simply be flows from the economy to the environment.



Comments received

- Definition of waste – is it consistent with the WFD? Should we take the narrow approach (only materials collected by ISIC 38)?
- Definition of residuals – different views on what it covers
- Unused extraction – does it enter the economy?



Questions to London Group

1. *Do you agree with the proposed framework for the classification of flows in the revised SEEA?*
Specifically, do you agree with the alternative typology of flows to distinguish flows from the environment to the economy, flows within the economy, and flows from the economy to the environment?
2. *Do you agree with the proposed definition of waste?*
3. *Are the proposed gross flow accounts for waste useful, and are they feasible?*
4. *Do you agree with the proposed definitions of residuals and of flows to and from the environment?*
5. *Do you agree with the proposal to extend the classification of waste, at least until completion of a review by the Expert Group on Classifications, with EWC Stat categories for the purpose of classifying waste?*
6. *Do you agree on the use of the categories developed by Karl Shoer to track flows to and from the environment, at least until these categories can be evaluated by the Expert Group on Classifications?*