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Classification of physical flows

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1. Introduction

Objective

1. The physical flows accounts in the SEEA 2003 describe flows within the economy as well as those between the economy and the natural environment. Four different types of flows are distinguished: natural resources, eco-system inputs, products and residuals. The recommended classifications underlying the physical flow accounts should be tuned to the various types of physical supply and use tables such as energy (flow) accounts, water accounts, waste accounts, material flow accounts and emission accounts. In order to guarantee compatibility between the various accounts and to support meaningful international comparisons between similar accounts, a consistent scheme of classifications for the physical flow accounts in the SEEA is being required. This paper is a first step in developing a full classification scheme of physical flows, based on the existing SEEA 2003 classifications.

Introduction and structure

2. It is probably desirable to express the various supply and use tables, i.e. energy, water, waste and material flows and emissions, in different kinds of accounting units (joules, cubic meters, kilograms etc.). The demarcation of each of these main flows is another important concern when it comes to developing classifications. All depends on the user demands of each of the accounts. The first issue addressed in this paper considers the desirability and practical feasibility to compile one single supply and use table that includes all these types of flows, or instead, whether a set of supply and use tables should be recommended for each of these main flow categories.

3. Secondly, in case a set of supply-use tables for each of these flows is being recommended, it is important to take care of the inevitable overlaps between these different tables. The feasibility to classify these overlapping flows in a unique way must therefore be addressed.

4. The third issue relates to the compilation of accounting aggregates and subsequently the derivation of environmental indicators from the physical supply and use tables. The choice of accounting units and accompanying classifications should take into consideration at which aggregation levels information on the physical economy needs to be represented by the accounts.

5. In the next sections of this paper a top down work programme is proposed for developing the classifications of the physical supply and use tables in the SEEA. Firstly, some updates and improvements for the existing

classifications are proposed. Secondly proposals are made to deal with the compatibility of these classifications with regard to the overlaps or inconsistencies of each of the above mentioned flow categories. Section 3 takes stock of some other specific classification issues, for example related to the demarcation of waste flows and emerging problems related to double counting. The final section of this paper takes stock of possible crosscutting SEEA revision issues that are probably related to classification issues.

6. The annexes provide an overview of all relevant existing classifications used in the current SEEA (natural resources, eco-system inputs, flows of products and flows of residuals in annexes 2 to 4 of the SEEA 2003) but also those used in MFA, SEEA-Water, and the EU waste regulation.

Main research issues

A complete system of physical flow accounts

7. Each main category of physical flows, broadly water, energy and materials, has its own requirements with regard to developing classifications. The classifications should determine what falls inside, and what falls outside the boundaries of each of these main categories of physical flows. For example, the MFA accounts deliberately exclude bulk water flows because the quantity is so large it would dwarf the flows of other, more relevant, materials.

8. The most obvious accounting unit for the energy accounts is joules. For the non-material energy products such as electricity and renewable energy categories such as solar and wind energy, it is even impossible to use kilograms as an accounting unit. In other words, a comprehensive economy-wide presentation of energy relies, among other things, on one meaningful accounting unit, i.e. joules.

9. Similarly, water flow accounts are generally expressed in cubic meters because this is considered the most relevant unit of account for measuring water flows. One may therefore conclude that it seems recommendable to have at least three types of physical supply and use subsystems in the SEEA: one for material flows (resource inputs, product throughputs and residual outputs), one for energy and one for water. It seems appropriate to develop for each of these subsystems a corresponding classification and units of account (kg, joules, m^3).

<u>Question 1</u>: Is the distinction between these three subsystems an useful starting point for developing classifications for physical flows?

Overlap between the subsystems of the environmental accounts

10. Obviously, the recommended three supply-use subsystems for materials, energy and water will overlap. For example, energy carriers, like coal or crude oil will probably be included in the energy flow subsystem as well as the material flow subsystem. A systematic set up the physical flow accounts require that overlapping cross-sections follow as much as possible one unique classification.

11. Considering overlaps between energy and material flows, the classification of energy related products such as coal or crude oil will probably not lead to problems. However, this may be a different story for biomass incinerated for purposes of energy generation (or waste incinerated for energy recovery). The classification of biomass in the energy accounts might not always correspond to the biomass classification as currently used in MFA. The problem occurs when biomass is used for different purposes among which energy generation. The MFA will record the total amount in Kg while the energy accounts will record only the amount (in joules) that is used for energy generation. In this case, for the same biomass classification, the total amount in Kg in the MFA does not match the amount of joules in the energy accounts. A detailed specification of the type of biomass in both MFA and the energy accounts will reduce the above problem to a large extent.

<u>Question 2</u>: Should overlapping cross-sections be classified as much as possible according to unique classifications? What are the most important problem areas in this respect?

Deriving indicators from the physical flow accounts

12. From the physical supply and use tables of each of the above described subsystems it must be possible to derive accounting aggregates that are meaningful from an environmental point of view. The classifications that will be developed for each subsystem must be suitable for compiling meaningful aggregates. For environmental pressure indicators it is important to take into consideration classification requirements for converting kilograms (or the other accounting units) into specific pressure related equivalents (global warming potentials, ozone layer depletion, acidification, eutrophication, toxicity etc.). The compilation of these aggregates will be further discussed in papers on compiling environmental indicators.

<u>Question 3</u>: Are existing classifications (as presented in the SEEA 2003 annexes) suitable for constructing meaningful accounting aggregates? If not, what kinds of modifications are being required?

Other (remaining) issues for future research

Recommended updates and improvements in the existing classifications of the subsystems

Energy accounts

13. The current SEEA does not provide a specific classification of energy flows. The physical flow accounts as described in the current SEEA 2003 only presents energy flow types which are included in the harmonized system (HS) and the central product classification (CPC). The above relates to some extent to a paper Karl Schoer and Ole Gravgård presented at the second UNCEEA meeting, namely that for the physical flow accounts in general the revised SEEA should explicitly recognize also the non-material flows such as those related to energy (electricity).

14. As a consequence, other energy carriers, such as various renewable sources of energy (solar energy, geothermal power, liquid bio fuels, fish oil and heat pumps etc.), are not well specified in the current SEEA. This may also be the case for other energy sources such as (EA11) biological resources and (EA14) solid waste. Of course, it is very important to account for all flows of energy in order to be able to analyse all changes in the supply and use of energy. The Oslo group is currently working on a classification scheme for energy flows. The classification of energy flows in the revised SEEA must be derived from the energy flow classifications developed by the Oslo Group. At the same time there seems a need to align this classification where possible with the CPC.

<u>Recommendation 1</u>: The classification of energy flows in the SEEA should be aligned as much as possible with the classification of energy statistics and the CPC.

Water accounts

15. The SEEAW handbook provides a standard for harmonized water accounts and builds on the methodologies presented in the SEEA 2003. However, the classification used in physical supply and use tables of water in the SEEA 2003 differ slightly from the classification used in the supply and use tables in the SEEAW (see annex 4).

<u>Recommendation 2</u>: Future work should involve reconciliation the water flows classifications in the SEEA with the classification in the SEEAW?

Material flow accounts

16. For the material flow accounts, the classification in the Eurostat MFA-questionnaire can be used as point of departure (see annex 2). The set up of

the questionnaire is based on recently developed handbooks by the OECD (Parts I-IV). Although there are some conceptual differences between the MFA described in the SEEA 2003 and the OECD handbooks (see UNCEEA paper Karl Schoer and Ole Gravgård), the classification schemes seem to be congruous. The classifications in the Eurostat questionnaire are compatible with the internationally recognized CPA and SITC classifications.

Recommendation 3: Future work should involve reconciliation of the SEEA classification of material flows with the classifications of the Eurostat MFA questionnaire.

Solid waste

17. As a starting point the recent developed European Waste Statistic Regulation can be used for classifying solid waste (see annex 3). The classification consists of several levels of detail. The most aggregated level is very similar to the classification in the SEEA 2003. Only, radioactive waste is not included in the EU waste regulation.

18. Categories of waste products in the MFA (and CPC) can be aggregated to product classifications that do not solely consist of waste. Waste residuals seem to be classified as a single group in the MFA. Thus, although the total amount of waste is accounted for in the MFA, waste classifications from the EU waste regulation can not be found in the MFA.

Recommendation 4: Future work should involve reconciliation of the SEEA waste classification with classifications of the European Waste Statistic Regulation.

Boundaries between residuals, products, resources and ecosystem inputs

Residuals versus products

19. The definition of residuals in the SEEA 2003 seems ambiguous. Despite the definition, in some cases residuals seem to have a commercial value. Solid wastes can be referred to as residuals with a commercial value (SEEA section 3.5 and 3.66). Consistency with the SNA concepts and the CPC classification demands a clear-cut distinction between products (with market values) and residuals (without market values).This implies that solid waste with and without market values should be classified as waste products and waste residuals respectively.

Recommendation 5: Concerning the terminology in the SEEA, it should be specified when solid waste refers to residuals or products.

20. If recommendation 5 is generally agreeable, the waste *product* classification of CPC should correspond to the adopted waste *residual* classification of, for example, the EU Waste Statistics Regulation. For example, paper waste, metals and biomass can be a residual or a product. It should be possible to

classify them accordingly. Currently, the waste residual classification does not correspond to the waste product classification. The CPC waste product classification is less detailed and does not always have a direct link to the waste residual classifications in the EU waste regulation

Recommendation 6: The classifications of the waste products in the CPC should match the waste residual classification.

Biological resources versus products

21. In EW-MFAcc the harvest of cultivated resources are regarded flows from the environment to the economy. According to the SNA/SEEA conventions the harvest of cultivated resources must be regarded as flows within the economy. As a result, ecosystem inputs (resulting in growth) are regarded flows from nature to economy.

22. In the EW-MFA literature it is stated that certain system-boundary conventions derived from coherence with national accounts seem to contradict common sense and are not suited to the conventions adopted in some policy contexts and in current statistical work. As a pragmatic response to the connected difficulties, EW-MFAcc gives up some coherence with the national accounts for the sake of the feasibility and more immediate readability and usability of the accounts.

23. Also, the SEEA 2003 suggests a pragmatic approach because of difficulties of measuring the ecosystem inputs accurately. In the SEEA annex for classification of flows of natural resources, cultivated resources are also included. In the UNCEEA paper by Karl Schoer and Ole Gravgård, a "production approach" is suggested, i.e. the EW-MFAcc approach for cultivated biomass plus a change in inventories of non harvested biomass.

Recommendation 7: The classification of cultivated biomass in the SEEA should be in line with the outcome of the discussion on the relation between the OECD guidance manual on EW-MFAcc and the SEEA 2003.

Other issues for consideration

Solid waste

24. From an environmental policy perspective, the treatment method (e.g. incineration, storage) of waste is very important. In order to account for treatment methods, in the SEEA 2003, page 114, the following classification for waste residuals is being suggested:

    - residuals discharged into the environment;
    - residuals for recycling;
    - residuals for treatment; and

- residuals (waste) for landfill.

Incorporating the treatment method into a waste classification will result in a huge expansion of waste categories because each type of waste flow can have various treatment methods.

<u>Recommendation 8:</u> The waste treatment method should be identified with the activity classification (e.g. incineration with and without energy retrieval, land filling, recycling) instead of as waste classification entries.

Double counting issues

25. Solid waste can be discharged in rivers or lakes. A battery in a river may leak specific substance of great environmental concern such as heavy metals. These emissions may also appear as entries in the water emission accounts. If so, double counting of residual flows to the environment occurs. Conceptually, emissions from waste dumped in a lake should be regarded as emission within the environment and, therefore, not be recorded. The same counts for emission from uncontrolled (= in the environmental sphere) landfill sites.

26. Materials classified under "Dissipative use of products and dissipative losses" might appear in the MFA but also in the air emission accounts (particles) and the water/soil accounts (nutrients).

27. In section 3.75 of the SEEA 2003 the double counting of water flows is addressed: "Water absorbed by plants and animals is normally treated as an ecosystem input when the plants and animals are within the production boundary (cultivated). If the accounts for natural resource (or product) flows include all water extracted for irrigation and drinking water, this will give rise to some double-counting. This means that in principle the accounts should allow for this transformation of natural resources into ecosystem inputs or that the natural resource extraction should be reduced by the amount of ecosystem inputs. However, in practice this will seldom be a problem either because the size of the ecosystem inputs are marginal compared to the often huge amounts of natural resource flows of water or because the natural resource flows on one side and ecosystem inputs on the other are treated in separate accounts for separate purposes. Only in the case of a total accounting for all flows do explicit measures need to be taken to avoid double counting."

<u>Recommendation 9:</u> Although conceptually not correct, double counting of small (but toxic) flows should not be considered a problem because it enables complete and meaningful individual accounts .

Reminder

28. The classifications of physical flows in the revised SEEA may depend to some extent on the outcomes of other LG issue papers and discussions in working groups. In determining the classifications, at least the following issues from the SEEA revision list should be taken into consideration:

- Links between OECD handbook on EW-MFAcc and the SEEA. (issue 1)
- Standardisation energy flows agreed upon by the Oslo group. (issues 3 & 4)
- Issue paper on environmental accounts indicators.
- Issue paper on asset classifications. (issue 10)

Annex 1: Classifications in the SEEA 2003

In annex 1 all classifications are given as they appear in the SEEA 2003. This paper is only concerned with the classification of flows of goods and services. Classification of environmental protection activities and expenditure, functional classifications, activity classifications and classification of the environmental industry are excluded.

The following classifications are considered:

Flows of natural resources and ecosystem inputs

For practical flow accounting, the SEEA 2003 asset classification is used as starting point for flows of natural resource and ecosystem inputs (source: MFA guide Eurostat 2001). For assets the following classification is made:

- EA1 Natural resources
- EA2 land and surface water
- EA3 Ecosystems
- EAM Memorandum item – intangible environmental assets.

For all the above (sub)classifications it is indicated if:

1. monetary valuation is normally possible
2. they fall within the SNA boundary

Unlike natural resources, ecosystem inputs are not easy identifiable in any of the products to which they contribute.

Physical product flows (based on Central Product Classification (CPC))

It should be noted that the CPC has been developed primarily for economic analysis and that supplementary classifications may be used for the analysis of physical characteristics. However, in order to ensure international comparability and coherence with the SNA it seems appropriate to ensure that any supplementary classification introduced in the physical flow accounts can be re-aggregated to the CPC. A new version of the CPC will be introduced shortly.

Residuals

1) Solid waste
2) Emission to air
3) Emission to water
4) Dissipative use of products and dissipative losses
5) Returned water and memorandum items for mass

balancing

Items 1 to 3 are tailored towards emissions accounts. Items 4 and 5 are for the purpose of mass balancing and useful for MFA, water accounts or consistency checks.

Annex 2: Classifications of the EW-MFA Eurostat questionnaire

Import exports

C.1 Biomass and biomass products

C.1.1 primary crops
- C.1.1.1 Cereals, primary and processed
- C.1.1.2 Roots and tubers, primary and processed
- C.1.1.3 Sugar crops, primary and processed
- C.1.1.4 Pulses, primary and processed
- C.1.1.5 Nuts, primary and processed
- C.1.1.6 Oil bearing crops, primary and processed
- C.1.1.7 Vegetables, primary and processed
- C.1.1.8 Fruits, primary and processed
- C.1.1.9 Fibres, primary and processed
- C.1.1.10 Other crops (Spices Stimulant crops, Tobacco, Rubber and other crops), primary and processed

C.1.2 Crop residues
- C.1.2.1 n.a.
- C.1.2.2 Other crop residues (sugar and fodder beet leaves, other)

C.1.3 Fodder crops incl grassland harvest
- C.1.3.1 Fodder crops
- C.1.3.2 Biomass harvested from grassland

C.1.4 n.a.

C.1.5 Wood primary and processed
- C.1.5.1 Timber, primary and processed
- C.1.5.2 Wood fuel and other extraction, primary and processed

C.1.6 Fish capture, crustaceans, molluscs and aquatic invertebrates primary and processed

C.1.7 n.a.

C.1.8 Live animals other than in B 1.6., meat and meat products
- C.1.8.1 Live animals other than in B 1.6.
- C.1.8.2 Meat and meat preparations
- C.1.8.3 Dairy products, birds eggs, and honey
- C.1.8.4 Other products from animals (animal fibres, skins, furs, leather etc.)

C.1.9 Products mainly from biomass

C.2 Metal ores and concentrates, processed metals

C.2.1 Iron ores and concentrates, iron and steel

C.2.2 non-ferrous metal ores and concentrates, processed metals
- C.2.2.1 Copper
- C.2.2.2 Nickel
- C.2.2.3 Lead
- C.2.2.4 Zinc
- C.2.2.5 Tin
- C.2.2.6 Gold, silver, platinum and other precious metals
- C.2.2.7 Aluminium
- C.2.2.8 Uranium and thorium
- C.2.2.9 Other metals

C.2.3 Products mainly from metals

C.3 Non metalic minerals primary and processed

C.3.1 Ornamental or building stone

C.3.2 Limestone, gypsum, chalk, and dolomite

C.3.3 Slate

C.3.4 Gravel and sand

C.3.5 Clays and kaolin

C.3.6 Chemical and fertilizer minerals

C.3.7 Salt

C.3.8 Other mining and quarrying products n.e.c.

C.3.9 Excavated soil, only if used (e.g for construction work)

C.3.10 Products mainly from non-metalic minerals

C.4 Fossil energy carriers, primary and processed

C.4.1 Brown coal incl. oil shale and tar sands

C.4.2 Hard coal

C.4.3 Petroleum

C.4.4 Natural gas

C.4.5 Peat

Extraction

A.1 Biomass

A.1.1 Primary crops

A.1.1.1 Cereals
A.1.1.2 Roots, tubers
A.1.1.3 Sugar crops
A.1.1.4 Pulses
A.1.1.5 Nuts
A.1.1.6 Oil bearing crops
A.1.1.7 Vegetables
A.1.1.8 Fruits
A.1.1.9 Fibres
A.1.1.10 Other crops (Spices Stimulant crops, Tobacco, Rubber and other crops)

A.1.2 Crop residues (used)

A.1.2.1 Straw
A.1.2.2 Other crop residues (sugar and fodder beet leaves, other)

A.1.3 Fodder crops incl grassland harvest

A.1.3.1 Fodder crops
A.1.3.2 Biomass harvested from grassland

A.1.4 Grazed biomass

A.1.5 Wood

A.1.5.1 Timber (Industrial roundwood)
A.1.5.2 Wood fuel and other extraction

A.1.6 Fish capture, crustaceans, molluscs and aquatic invertebrates

A.1.7 Hunting and gathering

A.2 Metal ores (gross ores)

A.2.1 Iron ores

A.2.2 Non-ferrous metal ores

A.2.2.1.a Copper ores - gross ore (t)
A.2.2.1.b Copper ores - metal content (t)
A.2.2.2.a Nickel ores - gross ore (t)
A.2.2.2.b Nickel ores - metal content (t)
A.2.2.3.a Lead ores - gross ore (t)
A.2.2.3.b Lead ores - metal content (t)
A.2.2.4.a Zinc ores - gross ore (t)
A.2.2.4.b Zinc ores - metal content (t)
A.2.2.5.a Tin ores - gross ore (t)
A.2.2.5.b Tin ores - metal content (t)
A.2.2.6.a Gold, silver, platinum and other precious metal ores - gross ore (t)
A.2.2.6.b Gold, silver, platinum and other precious metal ores - metal content (t)
A.2.2.7.a Bauxite and other aluminium ores - gross ore (t)
A.2.2.7.b Bauxite and other aluminium ores - metal content (t)
A.2.2.8.a Uranium and thorium ores - gross ore (t)
A.2.2.8.b Uranium and thorium ores - metal content (t)
A.2.2.9.a Other metal ores - gross ore (t)
A.2.2.9.b Other metal ores - metal content (t)

A.3 Non metalic minerals

A.3.1 Ornamental or building stone

A.3.2 Limestone, gypsum, chalk, and dolomite

A.3.3 Slate

A.3.4 Gravel and sand

A.3.5 Clays and kaolin

A.3.6 Chemical and fertilizer minerals

A.3.7 Salt

A.3.8 Other mining and quarrying products n.e.c.

A.3.9 Excavated soil, only if used (e.g for construction work)

A.4 Fossil energy carriers

A.4.1 Brown coal incl. oil shale and tar sands

A.4.2 Hard coal

A.4.3 Petroleum

A.4.4 Natural gas

A.4.5 Peat

Annex 3: Classifications of European Waste Regulation (level of detail used in the Dutch waste accounts)

Solid waste	Hazardous (h) or non-hazardous (n-h)
Compound waste (01)	
spent solvents (01.1)	
halogenated (01.11)	h
non-halogenated (01.12)	h
acid, alkaline or saline wastes (01.2)	h
	n-h
used oils (01.3)	
motor oils (01.31)	h
other oils (01.32)	h
spent chemical catalysts (01.4)	h
	n-h
Chemical preparation waste (02)	
off-specifiaction (02.1)	
agrochemical waste (02.11)	h
	n-h
unused medicines (02.12)	h
	n-h
paints, varnish, inks and adhesive wastes (02.13)	h
	n-h
other (02.14)	h
	n-h
other (02.2, 02.3)	h
packaging polluted (02.33)	h
Other chemical waste (03)	
chemical deposits and residues (03.1)	h
	n-h
industrial effluent sludges (03.2)	h
	n-h
Health care and biological wastes (05)	h
	n-h
Metallic wastes (06)	
ferro (06.1)	n-h
non-ferro (06.2)	
precious metal (06.21)	h
aluminium (06.23)	n-h
copper (06.24)	n-h
lead (06.25)	n-h
other metal (06.26)	n-h
mixed (06.3)	h
	n-h
Non-metallic waste (07)	
glass wastes (07.1)	h
	n-h
paper and cardboard wastes (07.2)	
packaging (07.21)	n-h
other (07.22)	n-h
rubber wastes (07.3)	
tyres (07.31)	n-h
plastic wastes (07.4)	
packaging (07.41)	n-h
other (07.42)	n-h
wood wastes (07.5)	
packaging (07.51)	n-h
other (07.52, 7.53)	h
	n-h
textile wastes (07.6)	
worn clothing (07.61)	n-h
other (07.62, 7.63))	n-h
waste containing PCB (07.7)	h

Solid waste	Hazardous (h) or non-hazardous (n-h)
Discarded equipment (08)	
discarded vehicles (08.1)	h
discarded electrical and electronic equipment (08.2)	h
	n-h
discarded machines and equipment components (08.4)	
batteries and accumulators wastes (08.41)	h
	n-h
other (08.43)	h
Animal and vegetable wastes (09)	
waste of food preperation and products (09.1)	
animal waste of food preparation and products (09.11)	n-h
vegetal waste of food preparation and products (09.12)	n-h
mixed waste (09.13)	n-h
green waste (09.2)	n-h
animal faeces, urine and manure (09.3)	n-h
Mixed ordinary waste (10)	
household and similar wastes (10.1)	
household waste (10.11)	n-h
bulky waste (20 03 07)	n-h
other	n-h
street cleaning waste (10.12)	n-h
mixed and undifferentiated materials (10.2)	
mixed packaging (10.21)	n-h
other (10.22)	h
	n-h
sorting residues (10.3)	h
	n-h
Common sludge (11)	
waste water treatment sludges (11.1)	
sludges treatment public sewage water (11.11)	n-h
biodegradable sludge treatment other waste water (11.1	n-h
sludges purification drinking and process water (11.2)	n-h
dredging spoils (11.3)	n-h
cesspit contents (11.4)	n-h
Mineral waste (12)	
construction and demolition waste (12.1)	
concrete, bricks and gypsum waste (12.11)	h
	n-h
other (12.12, 12.13)	h
	n-h
asbestos waste (12.2)	h
mineral wastes (12.3, 12.5)	h
	n-h
combustion waste (12.4)	
waste from flue gas purification (12.41)	h
	n-h
slags and ashes from combustion (12.42)	h
	n-h
contaminated soils and polluted dredging spoils (12.6)	h
Solidified, stabilized and vitrified wastes (13)	h / n-h

Annex 4: Classifications of water flows

Classifications supply and use tables in the SEEA 2003

Use

1. Total abstraction

From surface water

From groundwater

From other water

For own use

For delivery

2. Total use of distributed water

Water received by users

Of which recycled water

Waste water collected by sewerage

Supply

1. Total supply of distributed water

Water supplied to users

Of which recycled water

Waste water to sewerage

2. Total residuals

To inland water

Returns from irrigation

Treated wastewater

Untreated wastewater

Cooling water

Water used for hydroelectricity

Water lost in transport

Other returns of water

To the sea

3. Consumption

Classifications supply and use tables in the SEEAW

Use

1. Total abstraction

1.a. Abstraction for own use

Hydroelectric power generation

Irrigation water

Mine water

Urban runoff

Cooling water

Other

1.b. Abstraction for distribution

1.i. From water resources:

1.i.1 Surface water

1.i.2 Groundwater

1.i.3 Soil water

1.ii. From other sources

1.ii.1 Collection of precipitation

1.ii.2 Abstraction from the sea

2. Use of water received from other economic units

of which:

2.a. Reused water

Supply

1. Supply of water to other economic units

of which:

4.a. Reused water

4.b. Wastewater to sewerage

4.c. Desalinated water

2. Total returns

Hydroelectric power generation

Irrigation water

Mine water

Urban runoff

Cooling water

Losses in distribution because of leakages

Treated wastewater

Other

5.a. To water resources

5.a.1. Surface water

5.a.2. Groundwater

5.a.3. Soil water

5.b. To other sources (e.g. sea water)

3. Consumption

of which:

7.a. Losses in distribution not because of leakages