

SEEA BASIC CONCEPTS (BASED ON SEEA- 2012)

CONCEPT	DEFINITION
Abstraction	Abstraction is defined as the amount of water that is removed from any source, either permanently or temporarily, in a given period of time. Water used for hydroelectric power generation, is considered as abstraction and is recorded as a use of water by the abstractor. Water abstracted but not used in production, such as water flows in mine de-watering, are recorded as natural resource residuals. Water abstraction is disaggregated by source and by industry. (SEEA 3.195)
Actual evapo-transpiration	Actual evapotranspiration refers to the amount of water that evaporates from the land surface and is transpired by the existing vegetation/plants when the ground is at its natural moisture content as determined by precipitation and soil properties. Actual evapotranspiration will typically be estimated using models. (SEEA 5.489 ii)
Assets (environmental)	Environmental assets are the naturally occurring living and non-living components of the Earth, together comprising the bio-physical environment, that may provide benefits to humanity. Although they are naturally occurring, many environmental assets are transformed to varying degrees by economic activities. In the SEEA, environmental assets are considered from two perspectives. In the Central Framework the focus is on individual components of the environment that provide materials and space to all economic activities. Examples include mineral and energy resources, timber resources, water resources and land. (SEEA 2.17)
Discharges	...Residuals may be discarded, discharged or emitted to the environment. (SEEA 2.92)... Water discharged into drains or sewers, water received by water treatment plants and water discharged direct to the environment is all considered wastewater. (SEEA 3.86)
Depletion	Depletion, in physical terms, is the decrease in the quantity of the stock of a natural resource over an accounting period that is due to the extraction of the natural resource by economic units occurring at a level greater than that of regeneration. (SEEA 5.76)
Emissions	Emissions are substances <u>released to the environment</u> by establishments and households as a result of production, consumption and accumulation processes. Generally, emissions are analysed by type of receiving environment, (i.e. emissions to air, emissions to water bodies, emissions to soil) and by type of substance. (SEEA 3.88)

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Emissions to water	Emissions to water are substances released to water resources by establishments and households as a result of production, consumption and accumulation processes. For any individual establishment or household, emissions to water are <u>measured in terms of the additional substances that the establishment or household has added to water</u> rather than the total quantity of substances in the water discharged by the establishment or household. In this way, substances that were already in the water received by the establishment or household are not attributed to that unit. (SEEA 3.92)
Environmental assets	See assets (environmental).
Extraction	Extractions are reductions in stock due to the physical removal or harvest of an environmental asset through a process of production. (SEEA 5.49)
Final water use	Final Water Use is equal to evaporation, transpiration and water incorporated into products and reflects the quantity of water no longer available for use (generally referred to as “water consumption” within water statistics). (SEEA 3.222)
Gross releases	Gross releases comprise emissions to the environment, and substances captured within economic units or transferred to other economic units. (SEEA 3.90)
In situ use of water	As a component of land [water use] is the in situ or passive use of water that is being considered, for example, in the provision of space for transportation and recreation. (SEEA 5.474)
Losses	Another way in which residuals are considered is in terms of losses. This is of particular interest in the analysis of physical flows of energy and water. Four types of losses are identified according to the stage at which they occur through the production process. It is noted that some types of losses may be necessary for maintaining safe operating conditions as is the case of flaring and venting in the extraction of natural gas, while others may be unwanted losses as is the case for water evaporation from distribution channels. (SEEA 3.100). The four types of losses are (SEEA 3.101): <ol style="list-style-type: none"> 1. Losses during extraction 2. Losses during distribution 3. Losses during storage 4. Losses during transformation
Natural inputs	Natural inputs are all physical inputs that are moved from their location in the environment as a part of economic production processes or are directly used in production. They may be (i) natural resource inputs, such as mineral and energy resources or timber resources, (ii) inputs from renewable energy sources, such as solar energy captured by economic units, or (iii) other natural inputs such as inputs from soil (e.g. soil nutrients) and inputs from air (e.g. oxygen absorbed in combustion processes). (SEEA 2.89)
Natural resources	Natural resources include all natural biological resources (including timber and aquatic resources), mineral and energy resources, soil resources and water resources. (SEEA 2.101)

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Natural resource inputs	Natural resource inputs comprise physical inputs to the economy from natural resources. Thus natural resource inputs comprise inputs from mineral and energy resources, soil resources, natural timber resources, natural aquatic resources, other natural biological resources and water resources. Natural resource inputs exclude the flows from cultivated biological resources. Cultivated biological resources are produced within the economy and hence are not flows from the environment. (SEEA 3.47)
Natural resource residuals	See residuals (natural resource)
Products	Products are goods and services that result from a process of production in the economy. They are defined consistently with the definition of products in the SNA. Generally, products are evidenced by a transaction of positive monetary value between two economic units – for example the production and sale of a car from a manufacturer to a purchaser. For accounting purposes, generally only flows of products between economic units are recorded and flows internal to the operation of an establishment are ignored. However, depending on the purpose and field of analysis, it may be relevant to record these intra-establishment flows. For example, in the analysis of energy flows it may be relevant to record the generation of energy by an establishment from burning its own solid waste. (SEEA 2.91)
Releases	Not defined. It can be inferred from the texts that releases are substances added by economic activities and households that are released to other economic units (mainly sewers). “...releases to economic units (largely, sewerage facilities)” (SEEA 3.94).
Residuals	Residuals are flows of solid, liquid and gaseous materials, and energy that are discarded, discharged or emitted by establishments and households through processes of production, consumption or accumulation. Residuals may be discarded, discharged or emitted to the environment (for example emissions to air) but may also flow within the economy – such as when solid waste is collected as part of a waste collection scheme. (SEEA 2.92)
Residuals (natural resource)	Natural resource residuals are natural resource inputs that do not subsequently become incorporated into production processes and instead immediately return to the environment. Natural resource residuals are recorded as a generation of residuals by natural resource extracting industries and as a flow of residuals directly to the environment. (SEEA 3.98)
Return flows of water	Return flows of water comprise water that is returned to the environment. (SEEA 3.210)
Reused water	...reused water which is wastewater supplied to a user for further use with or without treatment. Wastewater that is recycled within the same establishment is not recorded in SEEA accounts. (SEEA 3.87)

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Wastewater	Wastewater is discarded water that is no longer required by the owner or user. Water discharged into drains or sewers, water received by water treatment plants and water discharged direct to the environment is all considered wastewater. Wastewater includes return flows of water which are flows of water direct to the environment, with or without treatment. All water is included regardless of the quality of the water, including returns from hydro-electric power generators. (SEEA 3.86)
“Water consumption”	Final water use is equal to evaporation, transpiration and water incorporated into products. (Also referred to in water statistics as “water consumption”) (SEEA 3.222)

SEEA = System of Environmental – Economic Accounting. Adopted in 2012 by the United Nations Statistical Commission. White cover publication.

IRWS = International Recommendations for Water Statistics.