

The use of regional data systems and LCA for sustainability indicators

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Introduction

For the creation of sustainability indicators (as well as any other) the need for robust and reliable data is crucial. The regional environmental data system in Poland consists of databases managed by regional authorities. These databases offer vast amount of detailed information regarding the use of environment in Polish regions.

Regional data systems

The regional database includes: the amount and sort of produced waste and the ways of its management, the registry of the issued decisions regarding waste production and management, the waste management plans and installations that are used in order to reclaim and neutralize waste with separation of the landfills and installations for thermal transformation of waste. The regional database is managed electronically and is consistent with the central database managed by the Ministry of the Environment. The information inputted into the database are prepared annually by the waste producers and refers to waste production, collection, recovery and

On the basis of information gathered in the regional databases there is a possibility of creating the sustainability indicators regarding the air emissions, water drawing, releases to the water and soil as well as wastes. The regional databases can be used within the framework of life cycle thinking to support actual dealing with the environmental problems instead of shifting them as well as to organise the vast amount of information available.

To successfully introduce the sustainability indicators they must be based on regional data:

- emissions (information available in Poland on the per enterprise basis),
- consumption (structure available in Poland on the per month per capita basis).

The goal indicators seem to be the most viable solution to influence the decision-making process on the entity level.

Sustainability indicators

The most important application of sustainability indicators:

- inform the regional policy makers,
- provide them with the tool to transform the environmental strategy goals into the measures to accomplish them,
- assess the progress and the legitimacy of implemented environmental policy.

Hence the support for the RAMEA project (Regionalized NAMEA-type matrix).

RAMEA

NACE	Industries	Economic aggregates		GHG		Air quality		Local air quality	
		Output	GVA	CO ₂ eq	CO ₂ eq	PM ₁₀ eq	PM ₁₀ eq	PM ₁₀ eq	PM ₁₀ eq
A, B	Agriculture, hunting, forestry & fishing	3.5	2.8	0.0	0.1	3.3	-	3.3	-
C	Mining and quarrying	0.9	1.0	0.2	0.0	2.6	0.0	2.7	-
D	Manufacturing	28.5	18.0	20.3	0.0	7.8	15.7	14.1	-
E	Electricity, gas and water supply	3.0	2.8	48.1	0.1	1.2	1.1	0.0	-
F	Construction	7.0	6.3	0.0	0.0	-	0.0	-	-
G, H	Wholesale and retail trade, hotels and restaurants	20.5	23.7	-	0.0	-	-	-	-
I	Transport, storage and communication	6.1	6.0	0.0	0.0	18.4	-	0.0	-
J-Q	Other services	28.7	26.3	0.0	0.0	49.4	0.1	7.3	-
01	Households - transport	-	-	0.0	17.3	41.3	0.0	17.4	7.7
04	Households - housing	-	-	11.1	13.9	58.5	17.3	65.3	58.6
-	Households - other	-	-	0.0	-	-	-	-	-
Total - Industries		100.0	100.0	68.9	0.2	82.7	17.3	41.4	-
Total - Households		-	-	100.0	31.1	99.8	17.3	82.7	58.6
Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

for Małopolska

The regional authority database provides the information pertaining to the system of environmental charges in Poland. Since these charges are levied practically on every substance or emission inputted into the environment, the scope of information gathered is very wide and it includes: gases and dusts released to the air, waste waters released to soil and water, cooling waters, waste landfilling, underground and surface water drawing, rain waters from the contaminated areas.

- RAMEA is the system of environmental and economic account that are designed to link the environment and the economy and to identify the most burdensome economic activities/sectors in the country or region.
- RAMEA supports the life cycle thinking in the environmental policy design and is the response to the needs expressed by the regional policy makers.
- RAMEA for Małopolska creates the basis for more effective decision-

RAMEA & LCA

making (with the emphasis on the relation between economic activities and environmental effects) as well as for the further analysis.

- RAMEA methodology uses the environmental themes that are similar to environmental impact categories used in Life Cycle Assessment.
- Therefore it is a basis for the sectoral LCA that will provide the decision makers with the outlook of the economy, combining the economic and environmental perspective.